



**J&K Scientific**

*Integrated Scientific & Industrial Resource Platform*



## J&K Product Guide

Quality Chemicals for Research and Development

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## About Us

At J&K Scientific, we understand that chemistry is not simply about scientific principles, and business is not only about the exchange of goods and services. Chemistry is a tool for understanding and meeting human needs, and business is about building relationships and working together to improve our world. We are committed to deliver only the finest quality products, by doing so it allows us to aid in drug discovery, environmental protection and myriad other endeavours that serve humanity both today and in the years to come.

J&K Scientific, founded in 1992, has grown over the past two decades to become a world leader in the supply and manufacture of chemical products. Our ongoing dedication to research and development, combined with our proven history of scientific achievements and business performances, have earned us recognition as a "High Technology Enterprise" by the Chinese Ministry of Science and Technology.

We understand and live in the same era where people and our planet face great challenges. Our mission is "To Accelerate Scientific and Industrial Development, Thereby Serving Humanity", as we strive to have a positive impact upon the world. Our chemicals are used by thousands of customers every day. To help make the oceans cleaner, the air better to breathe, our food safer to consume, conquer diseases, and prolong life through medicines. Most importantly, we strive to help develop sustainable energy sources and thousands of other products to make our planet more joyful, safe and fulfilling to live in, now, and in the future for both our children and generations to come.

This vision guides our actions as we work with our customers to solve their chemical production needs. We are proud to offer chemicals, related consumables, labware, packaging, safe and efficient delivery, expert consultation and attentive customer service; we are committed to being your one-stop research and manufacturing platform.

# Why choose J&K Scientific?

## Quality Products

- We offer over 600,000 chemicals and related products
- Significant warehouse inventory with immediate delivery of all in stock products
- New substance classes and unique chemical building blocks are invented every day
- High quality reliable products to increase your research and production efficiency



## Exceptional People

- Exceptional scientific team eager to consult on cutting edge research and development
- Enthusiastic idea sharing and collaboration on joint projects
- Expert “Chemist to Chemist” consultation and technical support is provided for all product applications



## Dependable Services

- Global supply chain with warehouses and local staff in dozens of countries
- Quick, safe and reliable packaging and delivery of high quality products
- Customer service approach based on commitment to long term relationship building
- Competitive pricing



## Flexible Manufacturing

- Unique high tech agile manufacturing process optimised to meet your specific needs
- State-of-the-art production facilities for custom product synthesis and packing requirements
- We manufacture over 23,000 J&K brand chemicals in house using our extensive laboratory and production facilities



# Customer Support Services

## ✓ Product Search:



### Online

Specifications, packaging options, pricing and stock availability information is available in our fully searchable J&K e-Shop:

[www.jk-sci.com](http://www.jk-sci.com)



### Telephone

Europe  
+32 (0) 11 34 03 90

North and South America  
+1 (952) 942-3333

China  
+86 10 8284 8833



### Email

Europe  
[jkeu@jk-sci.com](mailto:jkeu@jk-sci.com)

North and South America  
[jkus@jk-sci.com](mailto:jkus@jk-sci.com)

China  
[jkinfo@jk-sci.com](mailto:jkinfo@jk-sci.com)

## ✓ Quality:

J&K guarantees that product quality is in compliance with the specifications listed on the J&K e-Shop or, in the case of custom orders, on the quotation provided by J&K to the customer.

## ✓ Bulk and Custom Synthesis:

J&K offers custom synthesis for products ranging from grams to several hundred kilograms according to the customer's quality specifications.

## ✓ Shipping:

Most products mentioned in this J&K catalogue are available from our inventory. In-stock products are shipped within 1-3 days of order payment. All orders are shipped FOB J&K shipping point.

## ✓ Safety and Technical Documents:

SDS, Specifications and Certificate of Analysis for each product are available online in the Technical Support section of [www.jk-sci.com](http://www.jk-sci.com) or by email from [info@jk-sci.com](mailto:info@jk-sci.com).

**SAFETY NOTE:** J&K products in this catalogue are for laboratory or industrial use only. They are not to be used for food or drug applications, or to be used on human beings or animals.

## ✓ Comprehensive Global Resource Platform

J&K offers a comprehensive global scientific resource platform. This integrated platform is optimized to assure each customer a one-stop shopping and service experience regardless of where they are located in the world.

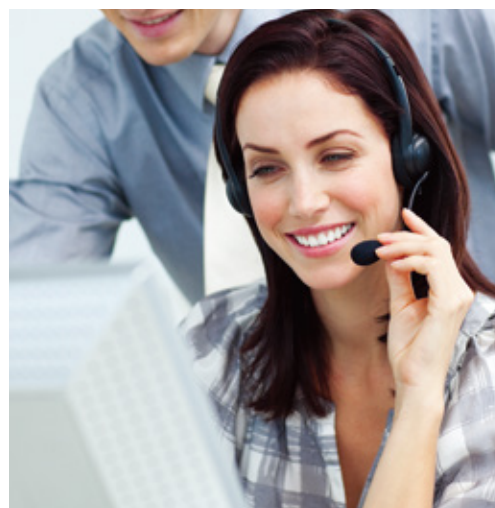


## ✓ 24/7 Convenience

J&K e-Shop at [www.jk-sci.com](http://www.jk-sci.com) allows customers to search for products, find pricing and stock availability information, place orders and check the status of existing orders.

## ✓ Fast Response to Customer Inquiries

J&K's Rapid Response System offers efficient order processing and inventory reservation in real time. It ensures that customer inquiries are answered quickly and scientific resources are delivered promptly.



## ✓ Dedicated Customer Service

J&K recognizes the value of its customers' time and staffs its Customer Service Team with qualified scientific professionals who offer dedicated one-to-one consultation.

## ✓ Custom Services

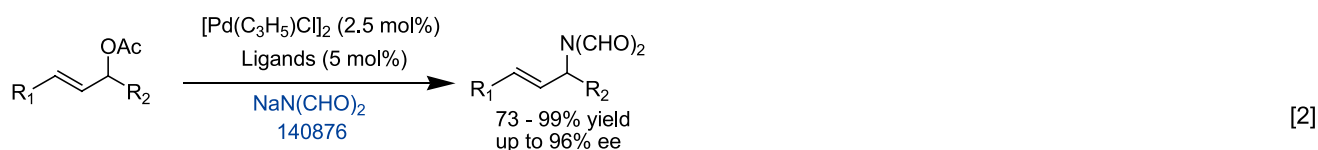
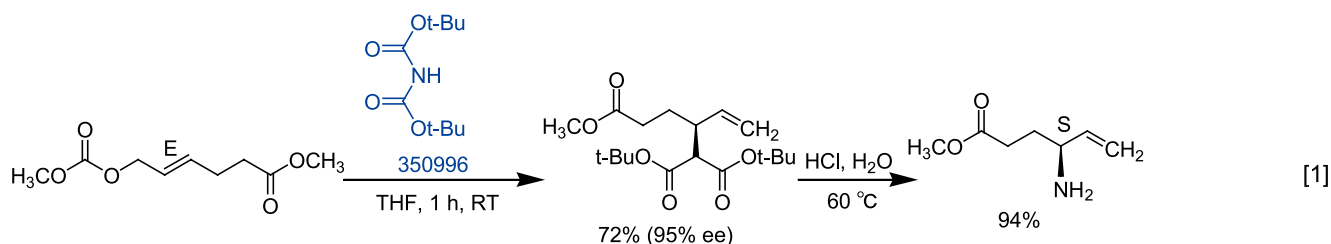
J&K recognizes the value of its customers' time and staffs its Customer Service Team with qualified scientific professionals who offer dedicated one-to-one consultation.



# Amination Reagents

In the last two decades, there has been explosive progress in synthetic methods for the production of amino compounds due to the rapidly increasing number of applications in pharmaceutical and material sciences. Developing novel amination reagents for the construction of new carbon-nitrogen bonds is crucial for the synthesis of amino molecules. For this purpose, many practical amination reagents such as Di-tert-butyliminodicarboxylate and Diformylamide sodium salt, with their high efficiency and excellent substrate diversity under mild reaction conditions, have been developed.

J&K supplies various high purity amination reagents to satisfy diverse customer demands, whether for laboratory use or large scale production.



## References

- [1] Gnamm, Christian et al, *Synthesis*, **2008**, (20), 3331-3350.  
 [2] Yi Wang and Kuiling Ding, *J. Org. Chem.*, **2001**, 66 (9), pp 3238-3241

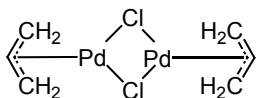
Cat. No.	Description	CAS
220009	4-Amino-4H-1,2,4-triazole, 99%	584-13-4
465497	N-Boc-p-toluenesulfonamide, 98%	18303-04-3
350996	Di-tert-butyl-iminodicarboxylate, 97%	51779-32-9
199766	N,O-Dimethylhydroxylamine hydrochloride, 99%	6638-79-5
130992	Diphenylphosphoryl azide, 98%	26386-88-9
136896	Hydroxylamine hydrochloride, 98.5%	5470-11-1
235088	Hydroxylamine sulfate, 99%	10039-54-0
276862	Hydroxylamine-O-sulfonic acid, 97%	2950-43-8
189571	O-Methylhydroxylamine hydrochloride, 99%	593-56-6
151390	Phthalimide potassium salt, 99%	1074-82-4
140876	Sodium diformylamide, 90%	18197-26-7

J&K offers an extensive range of metal catalysts and organocatalysts for research and manufacturing. All these products are in high demand and are praised for their high quality and competitive prices.

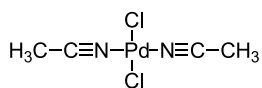
■ Metal Catalysts

• Palladium Catalysts

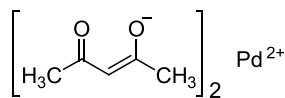
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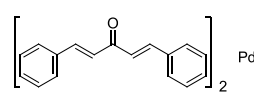
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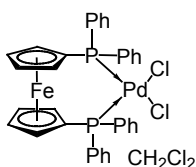
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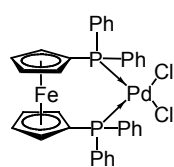
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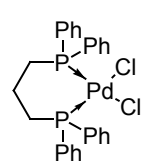
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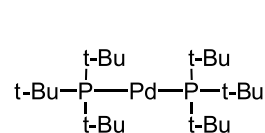
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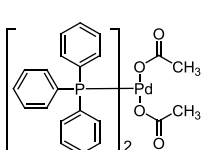
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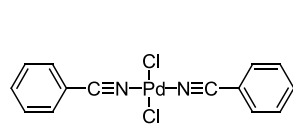
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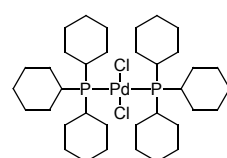
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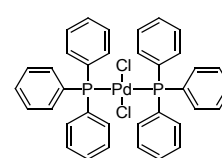
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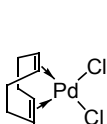
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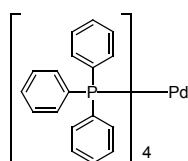
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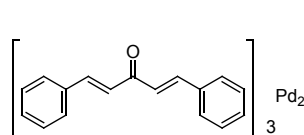
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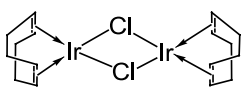
Cat. No.	Description	CAS
982398	Allylpalladium(II) chloride dimer, 98%	12012-95-2
288223	Bis(acetonitrile)dichloropalladium(II), 99%	14592-56-4
479131	Bis(acetylacetonato)palladium(II), 99%	14024-61-4
141541	Bis(dibenzylideneacetone)palladium(0), 98%	32005-36-0
811200	1,1'-Bis(diphenylphosphino)ferrocene palladium(II) chloride dichloromethane complex, 97%	95464-05-4
130100	1,1'-Bis(diphenylphosphino)ferrocene palladium dichloride, 99%	72287-26-4
966172	[1,3-Bis(diphenylphosphino)propane] palladium(II) chloride, 98%	59831-02-6
181420	Bis(tri-tert-butylphosphine)palladium, 98%	53199-31-8
285586	Bis(triphenylphosphine)palladium(II) diacetate, 98%	14588-08-0
411434	Dichlorobis(benzonitrile)palladium(II), 98%	14220-64-5
195061	Dichlorobis(tricyclohexylphosphine) palladium(II), 98%	29934-17-6
242195	Dichlorobis(triphenylphosphine) palladium(II), 98%	13965-03-2
607604	Dichloro(1,5-cyclooctadiene)palladium (II), 99%	12107-56-1
182482	Tetrakis(triphenylphosphine)palladium (0), 99.8%	14221-01-3
963490	Tris(dibenzylideneacetone)dipalladium(0), 98%	51364-51-3



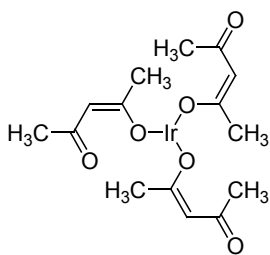
## Catalysts

## • Iridium Catalysts

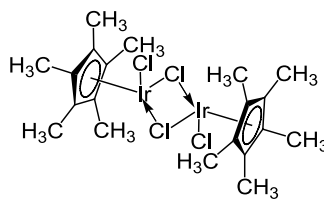
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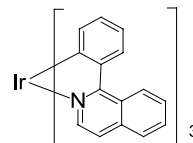
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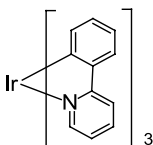
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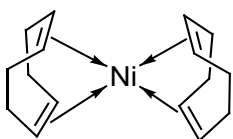
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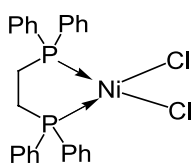
Cat. No.	Description	CAS
192969	Chloro(1,5-cyclooctadiene)iridium(I) dimer, 98%	12112-67-3
194202	Iridium(III) 2,4-pentanedionate, 99%	15635-87-7
283094	Pentamethylcyclopentadienyliridium(III) chloride dimer, 98%	12354-84-6
807415	Tris[1-phenylisoquinoline-C2,N]iridium (III), 99%	435293-93-9
115688	Tris(2-phenylpyridine)iridium, 99%	94928-86-6

## • Nickel Catalysts

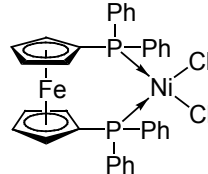
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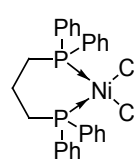
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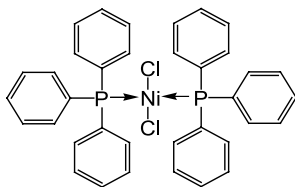
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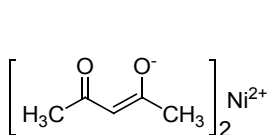
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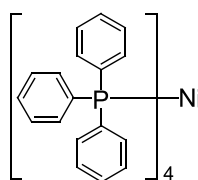
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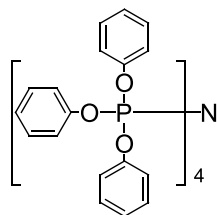
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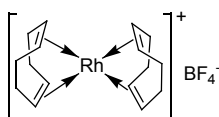
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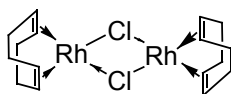
Cat. No.	Description	CAS
112324	Bis(1,5-cyclooctadiene)nickel(0), 98%	1295-35-8
102993	[1,2-Bis(diphenylphosphino)ethane] dichloronickel(II), 99%	14647-23-5
457030	[1,1'-Bis(diphenylphosphino)ferrocene] dichloronickel(II), 98%	67292-34-6
285821	[1,3-Bis(diphenylphosphino)propane] dichloronickel(II), 99%	15629-92-2
534325	Dichlorobis(triphenylphosphine)nickel(II), 98%	14264-16-5
452325	Nickel(II) acetylacetonate, 96%	3264-82-2
420739	Tetrakis(triphenylphosphine)nickel(0), 95%	15133-82-1
344201	Tetrakis(triphenylphosphite)nickel(0), 95%	14221-00-2

## • Rhodium Catalysts

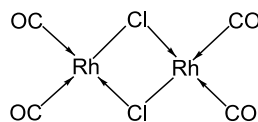
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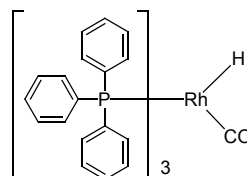
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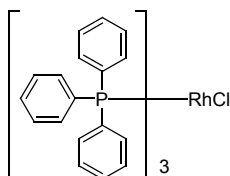
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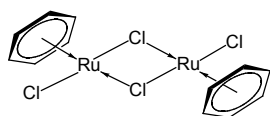
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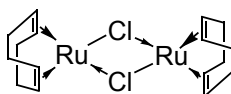
Cat. No.	Description	CAS
113857	Bis(1,5-cyclooctadiene)rhodium(I) tetrafluoroborate, 98%	35138-22-8
190993	Chloro(1,5-cyclooctadiene)rhodium(I) dimer, 98%	12092-47-6
249130	Chlorodicarbonylrhodium(I) dimer, 98%	14523-22-9
199224	Tris(triphenylphosphine)rhodium(I) carbonyl hydride, 98%	17185-29-4
175583	Tris(triphenylphosphine)rhodium(I) chloride, 99%	14694-95-2

## • Ruthenium Catalysts

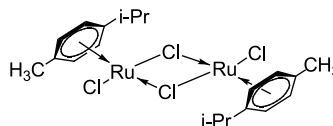
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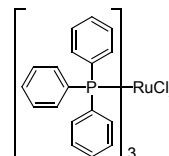
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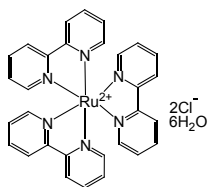
523196



233435



102033



Cat. No.	Description	CAS
283313	Benzeneruthenium(II) chloride dimer, 97%	37366-09-9
104033	Dichloro(1,5-cyclooctadiene) ruthenium(II), 97%	50982-12-2
523196	Dichloro(p-cymene)ruthenium(II) dimer, 98%, 33% Ru	52462-29-0
233435	Dichlorotris(triphenylphosphine)ruthenium (II), 98%	15529-49-4
102033	Tris(2,2'-bipyridyl)ruthenium(II) chloride hexahydrate, 98%	50525-27-4

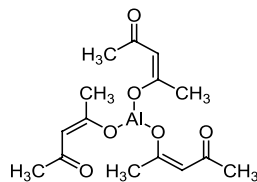
# Catalysts

## • Silver Catalysts

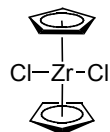
Cat. No.	Description	CAS
123929	Silver carbonate, 98.5%	534-16-7
166365	Silver chloride, 99%	7783-90-6
110485	Silver diethyldithiocarbamate, 98.5%	1470-61-7
544572	Silver(I) fluoride, 99%	7775-41-9
990535	Silver hexafluoroantimonate, 98%	26042-64-8
330960	Silver hexafluorophosphate, 98%	26042-63-7
375885	Silver methanesulfonate, 98%	2386-52-9
951000	Silver nitrate, 99%, 0.1 M solution in H <sub>2</sub> O	7761-88-8
547989	Silver(I) oxide, 99%	20667-12-3
163579	Silver sulfate, 99%	10294-26-5
540056	Silver tetrafluoroborate, 99%, 55.4% Ag	14104-20-2
174441	Silver trifluoromethanesulfonate, 98%	2923-28-6

## • Other Metal Catalysts

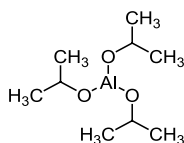
504675



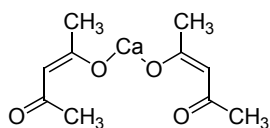
502144



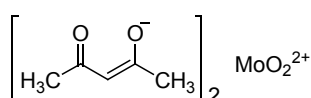
969496



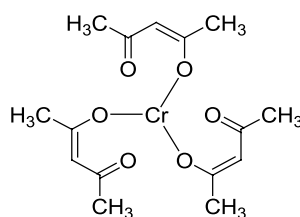
345185



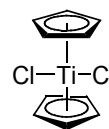
187053



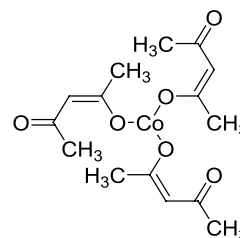
181149



568146

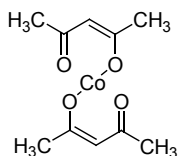


531725

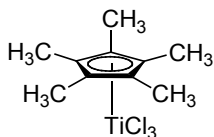


Cat. No.	Description	CAS
504675	Aluminum acetylacetonate, 99%	13963-57-0
969496	Aluminum isopropoxide, 98%	555-31-7
187053	Bis(acetylacetonato)dioxomolybdenum (VI), 97%	17524-05-9
568146	Bis(cyclopentadienyl)titanium dichloride, 99%	1271-19-8
502144	Bis(cyclopentadienyl)zirconium dichloride, 99%	1291-32-3
345185	Calcium acetylacetonate hydrate, 98%	19372-44-2
181149	Chromium(III) acetylacetonate, 97%	21679-31-2
531725	Cobalt(III) acetylacetonate, 98%	21679-46-9

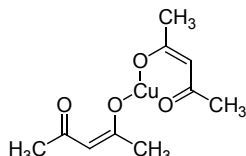
379709



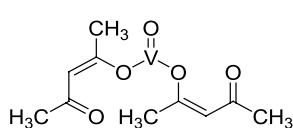
434683



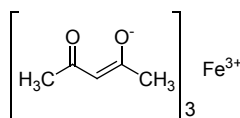
537056



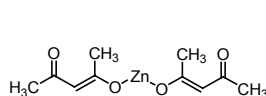
162797



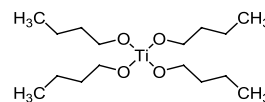
165348



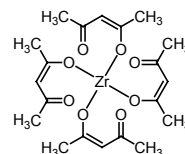
567109



257675



559670



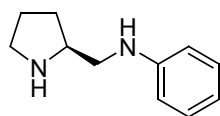
Cat. No.	Description	CAS
379709	Cobalt(II) acetylacetonate, 98%	14024-48-7
537056	Copper(II) acetylacetonate, 99%	13395-16-9
165348	Iron(III) acetylacetonate, 98%	14024-18-1
257675	Titanium(IV) n-butoxide, 99%	5593-70-4
434683	Trichloro(pentamethylcyclopentadienyl) titanium(IV), 98%	12129-06-5
162797	Vanadylacetylacetonate, 99%	3153-26-2
567109	Zinc acetylacetonate, 99%	14024-63-6
559670	Zirconium(IV) acetylacetonate, 98%	17501-44-9

#### ■ Organocatalysts

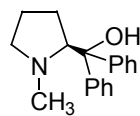
Organocatalysts have the advantage in mild reaction conditions, environment-friendly, easy to recycle, etc. It has become hotspot in the field of asymmetric catalysis.

#### ● Proline-Based Organocatalysts

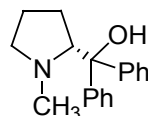
571700



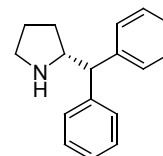
502051



137949



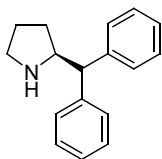
626149



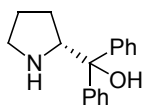
Cat. No.	Description	CAS
571700	(S)-(+)-2-(Anilinomethyl)pyrrolidine, 97%	64030-44-0
502051	$\alpha,\alpha$ -Diphenyl-N-methyl-L-prolinol, 97%	110529-22-1
137949	$\alpha,\alpha$ -Diphenyl-N-methyl-D-prolinol, 98%, ee: 98%	144119-12-0
626149	(R)-(+)-2-(Diphenylmethyl)pyrrolidine, 97%	22348-31-8

## Catalysts

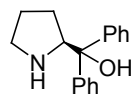
167670



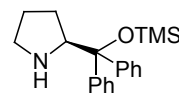
103137



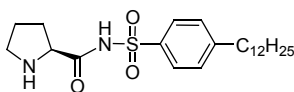
200580



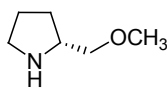
789171



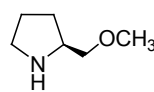
1341494



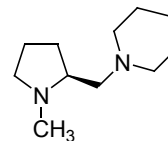
517955



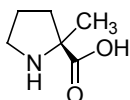
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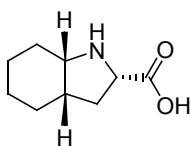
614301



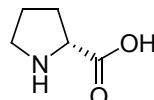
135264



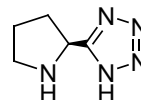
190551



211433



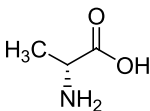
807367



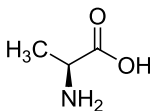
Cat. No.	Description	CAS
167670	(S)-(-)-2-(Diphenylmethyl)pyrrolidine, 97%	119237-64-8
103137	(R)-(+)- $\alpha,\alpha$ -Diphenyl-2-pyrrolidinemethanol, 98%	22348-32-9
200580	(S)-(-)- $\alpha,\alpha$ -Diphenyl-2-pyrrolidinemethanol, 98%	112068-01-6
789171	(S)-(-)- $\alpha,\alpha$ -Diphenyl-2-pyrrolidinemethanol trimethylsilyl ether, 98%	848821-58-9
1341494	(S)-N-(4-Dodecylphenylsulfonyl)pyrrolidine-2-carboxamide, (S)-HuaCat, 95%, mixture of branched isomers on the dodecyl chain	1068139-38-7
517955	(R)-(-)-2-(Methoxymethyl)pyrrolidine, 99%	84025-81-0
131046	(S)-(+)-2-(Methoxymethyl)pyrrolidine, 98.5%	63126-47-6
614301	(S)-(-)-1-Methyl-2-(1-piperidinomethyl)pyrrolidine	84466-85-3
135264	$\alpha$ -Methyl-L-proline, 98%	42856-71-3
190551	L-Octahydroindole-2-carboxylic acid, 98%	80875-98-5
211433	D-Proline, 99%	344-25-2
807367	(S)-(-)-5-(2-Pyrrolidinyl)-1H-tetrazole, 98%	33878-70-5

- Amino Acids Organocatalysts

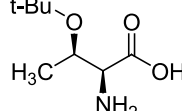
296502



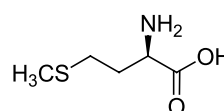
100844



203962

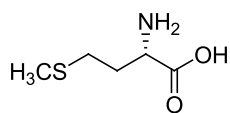


129888

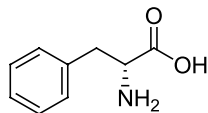


Cat. No.	Description	CAS
296502	D-Alanine, H-D-Ala-OH, 99%	338-69-2
100844	L-Alanine, H-Ala-OH, 99%	56-41-7
203962	O-tert-Butyl-L-threonine, H-Thr(tBu)-OH, 98%	4378-13-6
129888	D-Methionine, H-D-Met-OH, 98%	348-67-4

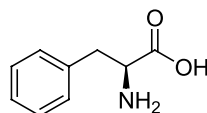
283889



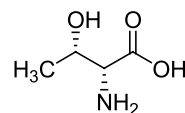
125942



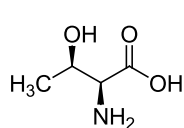
162943



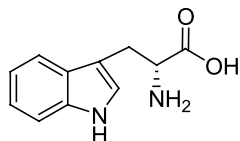
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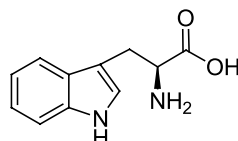
131924



128923



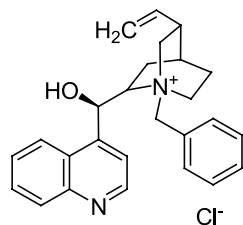
231123



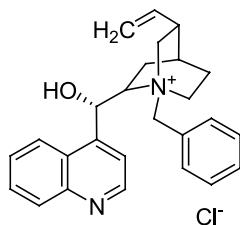
Cat. No.	Description	CAS
283889	L-Methionine, H-Met-OH, 99%	63-68-3
125942	D-Phenylalanine, H-D-Phe-OH, 99%	673-06-3
162943	L-Phenylalanine, H-Phe-OH, 99%	63-91-2
239361	D-Threonine, H-D-Thr-OH, 98%	632-20-2
131924	L-Threonine, H-Thr-OH, 99%	72-19-5
128923	D-Tryptophan, H-D-Trp-OH, 99%	153-94-6
231123	L-Tryptophan, H-Trp-OH, 99%	73-22-3

- Cinchona Alkaloids Organocatalysts

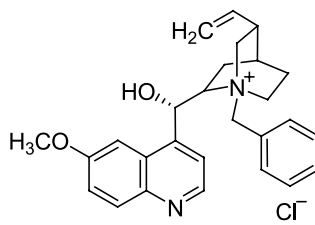
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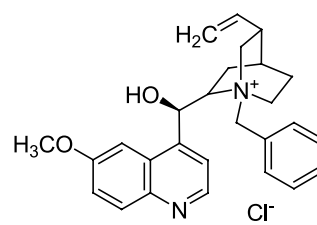
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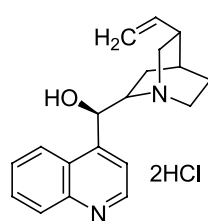
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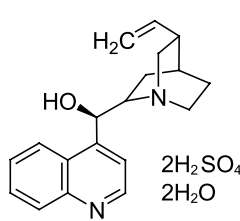
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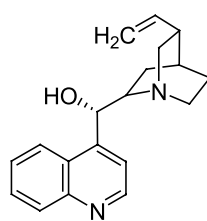
183523



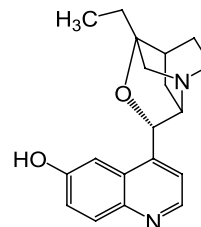
425790



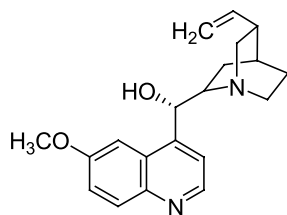
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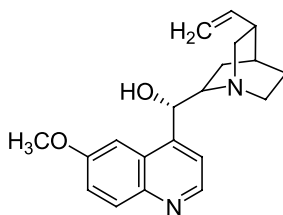
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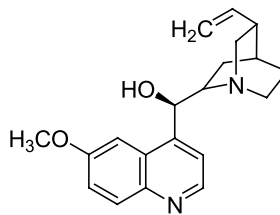
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272633



348554

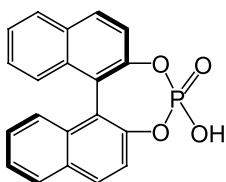


## Catalysts

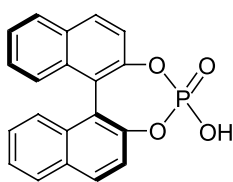
Cat. No.	Description	CAS
296650	N-Benzylcinchonidinium chloride, BCDC, 99%	69257-04-1
605236	N-Benzylcinchoninium chloride, BCNC, 98%	69221-14-3
490456	N-Benzylquinidinium chloride, 98%	77481-82-4
282966	N-Benzylquininium chloride, QUIBEC, 98%	67174-25-8
183523	Cinchonidine dihydrochloride, 98%	24302-67-8
425790	Cinchonidine sulfate dihydrate, 98%	524-61-8
287282	Cinchonine, 95%	118-10-5
934486	$\beta$ -Isocupreidine, $\beta$ -ICD, 98%	253430-48-7
216807	Quinidine, 98%	56-54-2
272633	Quinidine, 99%	56-54-2
348554	Quinine, 99%, anhydrous	130-95-0

- others

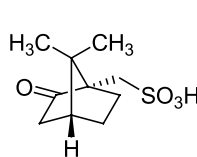
996635



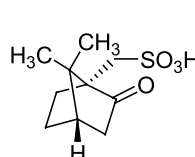
109345



485835



154661



Cat. No.	Description	CAS
996635	(R)-(-)-1,1'-Binaphthyl-2,2'-diylhydrogenphosphate, 98%	39648-67-4
109345	(S)-(+)-1,1'-Binaphthyl-2,2'-diylhydrogenphosphate, 98%	35193-64-7
485835	(+)-10-Camphorsulfonic acid, (+)-CSA, 99%	3144-16-9
154661	(-)-10-Camphorsulfonic acid, (-)-CSA, 99%	35963-20-3

# Chiral Resolution Reagents

Chiral resolution is one of the common methods of separating enantiomers from racemates, by using the different physical properties of the diastereomers obtained from the reaction of racemates and chiral resolving agents.

Chiral resolution reagents are often easily obtained from natural products. They act like alkaloids for the optical resolution of racemic acids and like tartaric acid for the optical resolution of racemic bases.

J&K offers a variety of chiral resolution reagents from grams to kilograms for purposes ranging from laboratory use to large scale production.

Cat. No.	Description	CAS
296502	D-Alanine, 99%	338-69-2
100844	L-Alanine, 99%	56-41-7
184495	(1R,2S)-(-)-2-Amino-1,2-diphenylethanol, 99%, ee:99%	23190-16-1
123338	(1S,2R)-(+)-2-Amino-1,2-diphenylethanol, 98%, ee:99%	23364-44-5
481650	(S)-(-)-2-(Aminomethyl)-1-ethylpyrrolidine, 98%	22795-99-9
235455	(S)-(+)-1-Amino-2-propanol, 98%	2799-17-9
571700	(S)-(+)-2-(Anilinomethyl)pyrrolidine, 97%	64030-44-0
169085	L-Arginine hydrochloride, 99%	1119-34-2
238459	D-Arginine, 99%	157-06-2
118040	L-Arginine, 99%	74-79-3
135048	D-Aspartic acid, 99%	1783-96-6
113968	L-Aspartic acid, 98%	56-84-8
237409	L-Azetidine-2-carboxylic acid, 98%	2133-34-8
296650	N-Benzylcinchonidinium chloride, 99%	69257-04-1
605236	N-Benzylcinchoninium chloride, 98%	69221-14-3
282966	N-Benzylquininium chloride, 98%	67174-25-8
996635	(R)-(-)-1,1'-Binaphthyl-2,2'-diylhydrogenphosphate, 98%	39648-67-4
109345	(S)-(-)-1,1'-Binaphthyl-2,2'-diylhydrogenphosphate, 98%	35193-64-7
115829	(R)-(-)-2-Butanol, 99%	14898-79-4
203962	O-tert-Butyl-L-threonine, 98%	4378-13-6
129536	(1S)-(-)-Camphanic acid, 98%	13429-83-9
355552	D-(+)-Camphoric acid, 99%	124-83-4
154661	(1R)-(-)-10-Camphorsulfonic acid, 99%	35963-20-3
485835	(1S)-(+)-10-Camphorsulfonic acid, 99%	3144-16-9
433825	(1R)-(-)-10-Camphorsulfonyl chloride, 98%	39262-22-1
578677	(1S)-(+)-10-Camphorsulfonyl chloride, 98%	21286-54-4
232996	Cinchonidine, 98.5%	485-71-2
183523	Cinchonidine dihydrochloride, 98%	24302-67-8
425790	Cinchonidine disulfate dihydrate, 98%	N/A
287282	Cinchonine, 95%	118-10-5
210093	(+)-Dibenzoyl-D-tartaric acid monohydrate, 98%, ee: 99%	80822-15-7
373414	(-)-Dibenzoyl-L-tartaric acid monohydrate, 98%	62708-56-9
408437	(+)-Dibenzoyl-D-tartaric acid, 99%	17026-42-5
281509	(-)-Dibenzoyl-L-tartaric acid, 99%	2743-38-6
107935	(-)-Diethyl D-tartrate, 99%	13811-71-7
626149	(R)-(+)-2-(Diphenylmethyl)pyrrolidine, 97%	22348-31-8



# Chiral Resolution Reagents

Cat. No.	Description	CAS
167670	(S)-(-)-2-(Diphenylmethyl)pyrrolidine, 97%	119237-64-8
137949	$\alpha,\alpha$ -Diphenyl-N-methyl-D-prolinol, 98%, ee: 98%	144119-12-0
502051	$\alpha,\alpha$ -Diphenyl-N-methyl-L-prolinol, 97%	110529-22-1
103137	(R)-(+)- $\alpha,\alpha$ -Diphenyl-2-pyrrolidinemethanol, 98%	22348-32-9
200580	(S)-(-)- $\alpha,\alpha$ -Diphenyl-2-pyrrolidinemethanol, 98%	112068-01-6
165367	(+)-Di-1,4-toluoyl-D-tartaric acid, 99%	32634-68-7
266931	(-)-Di-1,4-toluoyl-L-tartaric acid, 99%, ee:99%	32634-66-5
150306	D-Glutamic acid, 99%	6893-26-1
288636	L-Glutamic acid, 99%	56-86-0
274839	(S)-(-)-Indoline-2-carboxylic acid, 98%	79815-20-6
917349	D-Leucinol, 98%	53448-09-2
340612	Levamisole hydrochloride, 99%	16595-80-5
220201	D-Lysine hydrochloride, 99%	7274-88-6
278191	L-Lysine hydrochloride, 99%	657-27-2
611898	L-Lysine, 98%	56-87-1
120279	D-(+)-Malic acid, 99%	636-61-3
222616	L-(-)-Malic acid, 99%	97-67-6
194351	D-(-)-Mandelic acid, 99%	611-71-2
274721	L-(+)-Mandelic acid, 99%	17199-29-0
225291	L-Menthol, 99.5%	2216-51-5
517955	(R)-(-)-2-(Methoxymethyl)pyrrolidine, 99%	84025-81-0
131046	(S)-(+)-2-(Methoxymethyl)pyrrolidine, 98.5%	63126-47-6
107382	(R)-(-)- $\alpha$ -Methoxyphenylacetic acid, 99%	3966-32-3
441219	(S)-(+)- $\alpha$ -Methoxyphenylacetic acid, 99%, for chiral derivatization	26164-26-1
571643	(R)-(+)- $\alpha$ -Methoxy- $\alpha$ -(trifluoromethyl)phenylacetic acid, 98%, ee: 99.5%	20445-31-2
192146	(S)-(-)- $\alpha$ -Methoxy- $\alpha$ -(trifluoromethyl)phenylacetic acid, 98%	17257-71-5
191107	(R)-(-)- $\alpha$ -Methoxy- $\alpha$ -(trifluoromethyl)phenylacetyl chloride, 99%	39637-99-5
191106	(S)-(+)- $\alpha$ -Methoxy- $\alpha$ -(trifluoromethyl)phenylacetyl chloride, 99%	20445-33-4
283198	(S)-Methyl 2-hydroxy-2-phenylacetate, 98%	21210-43-5
500734	Methyl (R)-(-)-mandelate, 98%	20698-91-3
614301	(S)-(-)-1-Methyl-2-(1-piperidinomethyl)pyrrolidine, 98%	84466-85-3
135264	$\alpha$ -Methyl-L-proline, 98%	42856-71-3
241739	R-(+)-1-(1-Naphthyl)ethylamine, 99%	3886-70-2
390305	S-(-)-1-(1-Naphthyl)ethylamine, 99%	10420-89-0
190551	L-Octahydroindole-2-carboxylic acid, 98%	80875-98-5
238277	L-(-)-2-Octanol, 99%	5978-70-1
233896	D-Phenylalaninol, 98%	5267-64-1
143465	L-Phenylalaninol, 98%	3182-95-4
457038	(R)-(+)-1-Phenylethanol, 99%, for chiral derivatization	1517-69-7
284516	(S)-(-)-1-Phenylethanol, 99%, for chiral derivatization	1445-91-6
138277	(R)-(+)-1-Phenylethylamine, 99%	3886-69-9
134448	(S)-(-)-1-Phenylethylamine, 99%, ee:98%	2627-86-3

## Chiral Resolution Reagents

Cat. No.	Description	CAS
189515	(R)-(-)-2-Phenylpropionic acid, 99%	7782-26-5
196411	(S)-(+)-2-Phenylpropionic acid, 99%	7782-24-3
482328	L-Pipecolic acid, 98%	3105-95-1
482327	D-Pipecolinic acid, 98%	1723-00-8
211433	D-Proline, 99%	344-25-2
132204	L-Proline, 99%	147-85-3
133217	D-Pyroglutamic acid, 98%	4042-36-8
229913	L-Pyroglutamic acid, 99%	98-79-3
807367	(S)-(-)-5-(2-Pyrrolidinyl)-1H-tetrazole, 98%	33878-70-5
599946	(S)-(+)-1-(2-Pyrrolidinylmethyl)pyrrolidine, 98%	51207-66-0
216807	Quinidine, 98%	56-54-2
272633	Quinidine, 99%	56-54-2
348554	Quinine, 99%, anhydrous	130-95-0
561192	Quinine hydrochloride, 99%	130-89-2
130660	Quinine hydrochloride dihydrate, 99%	6119-47-7
976491	D-(-)-Tartaric acid diisopropyl ester, 99%	62961-64-2
122583	D-(-)-Tartaric acid, 99%	147-71-7
245105	L-(+)-Tartaric acid, 99%	87-69-4
204555	L-4-Thiazolidinecarboxylic acid, 98%	34592-47-7
239361	D-Threonine, 98%	632-20-2
131924	L-Threonine, 99%	72-19-5
128923	D-Tryptophan, 99%	153-94-6
231123	L-Tryptophan, 99%	73-22-3
168950	D-Valine, 98%	640-68-6
127141	L-Valine, 99%	72-18-4

# Coupling Reagents

Coupling reagents are widely used in the synthesis of polypeptides, nucleosides and carbohydrates.

J&K provides various coupling reagents classified as Carbodiimides, phosphoniums, uroniums, etc.

## ■ Carbodiimides

Cat. No.	Description	CAS
227227	1-Cyclohexyl-3-(2-morpholinoethyl) carbodiimide metho-p-toluenesulfonate, CMC, 95%	2491-17-0
275928	N,N'-Dicyclohexylcarbodiimide, DCC, 99%	538-75-0
134385	N,N'-Diisopropylcarbodiimide, DIC, 99%	693-13-0
495017	N-(3-Dimethylaminopropyl)-N'-ethylcarbodiimide, EDC, 98%	1892-57-5
211112	N-(3-Dimethylaminopropyl)-N'-ethylcarbodiimide hydrochloride, EDC·HCl, 99%	25952-53-8
284163	N-(3-Dimethylaminopropyl)-N'-ethylcarbodiimide methiodide, 98%	22572-40-3

## ■ Carbonylimidazole Derivatives

Cat. No.	Description	CAS
180331	1,1'-Carbonyldiimidazole, CDI, 98%	530-62-1
579542	1,1'-Carbonyl-di-(1,2,4-triazole), CDT, 97%	41864-22-6
130035	4,5-Dicyanoimidazole, DCI, 99%	1122-28-7

## ■ Phosphoniums

Cat. No.	Description	CAS
151585	Benzotriazol-1-yloxytris(dimethylamino)-phosphonium hexafluorophosphate, BOP, 98%	56602-33-6
154189	Benzotriazole-1-yl-oxy-trispyrrolidinophosphonium hexafluorophosphate, 99%	128625-52-5
312843	Bromotris(dimethylamino)phosphonium hexafluorophosphate, BroP, 98%	50296-37-2
241290	Bromo-tris-pyrrolidino-phosphonium hexafluorophosphate, 97%	132705-51-2
501952	Chlorotripyrrolidinophosphonium hexafluorophosphate, PyClOP, 98%	133894-48-1

## ■ Uroniums

Cat. No.	Description	CAS
249763	O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate, HATU, 99%	148893-10-1
163735	O-Benzotriazole-N,N,N',N'-tetramethyl uronium hexafluorophosphate, HBTU, 99%	94790-37-1
335839	O-(Benzotriazol-1-yl)-N,N,N',N'-bis(pentamethylene)uronium hexafluorophosphate, HBPipU, 98%	190849-64-0
172711	O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate, TBTU, 97%	125700-67-6
435124	O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate, TBTU, 99%	125700-67-6
296131	O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate, HCTU, 98%	330645-87-9
574451	O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate, TCTU, 98%	330641-16-2
405354	O-(1,2-Dihydro-2-oxo-pyridyl)-N,N,N',N'-tetramethyluronium tetrafluoroborate, TPTU, 99%	125700-71-2
435747	O-[(Ethoxycarbonyl)cyanomethylenamino]-N,N,N',N'-tetramethyluronium tetrafluoroborate, TOTU, 98%	136849-72-4
253208	O-(5-Norbornene-2,3-dicarboximido)-N,N,N',N'-tetramethyluronium tetrafluoroborate, TNTU, 98%	125700-73-4
342318	N,N,N',N'-Tetramethyl-O-(3,4-dihydro-4-oxo-1,2,3-benzotriazin-3-yl)uronium tetrafluoroborate, TDBTU, 98%	125700-69-8
511438	N,N,N',N'-Tetramethyl-O-(N-succinimidyl)uronium tetrafluoroborate, TSTU, 97%	105832-38-0
804418	S-(1-Oxido-2-pyridyl)-N,N,N',N'-tetramethylthiuronium hexafluorophosphate, 99%	212333-72-7

## ■ Formamidiniums

Cat. No.	Description	CAS
583444	Bis(tetramethylene)fluoroformamidinium hexafluorophosphate, BTFFH, 98%	164298-25-3
459914	1-(Chloro-1-pyrrolidinylmethylene)pyrrolidinium hexafluorophosphate, PYCLU, 98%	135540-11-3
488086	1-(Chloro-1-pyrrolidinylmethylene)pyrrolidinium tetrafluoroborate, 99%	115007-14-2
468966	Chloro-N,N,N',N'-tetramethylformamidinium hexafluorophosphate, TCFH, 98%	207915-99-9
293019	N,N,N',N'-Tetramethylfluoroformamidinium hexafluorophosphate, TFFH, 97%	164298-23-1

## ■ Active Esters

Cat. No.	Description	CAS
287411	N-Acryloxysuccinimide, 99%	38862-24-7
112722	Bis(4-nitrophenyl) carbonate, 97%	5070-13-3
191243	N,N'-Disuccinimidyl carbonate, DSC, 99%	74124-79-1
273661	Ethyl cyanoglyoxalate-2-oxime, Oxyma, 97%	3849-21-6
541810	4-Nitrobenzyl chloroformate, 97%	4457-32-3
278823	4-Nitrophenyl chloroformate, 98%	7693-46-1
166861	Pentafluorophenyl trifluoroacetate, 98%	14533-84-7
444282	N-Succinimidyl iodoacetate, 95%	39028-27-8

## ■ Others

Cat. No.	Description	CAS
195731	Bis(2-oxo-3-oxazolidinyl)phosphinic chloride, BOP-Cl, 97%	68641-49-6
987347	2-Bromo-1-ethylpyridinium tetrafluoroborate, BEP, 98%	878-23-9
272873	N-Bromosuccinimide, NBS, 99%	128-08-5
509758	2-Chloro-1,3-dimethylimidazolidinium hexafluorophosphate, CIP, 98%	101385-69-7
273795	6-Chloro-1-hydroxybenzotriazol, Cl-HOBt, 98%	26198-19-6
1150273	(1-Cyano-2-ethoxy-2-oxoethylidenaminoxy)dimethylaminomorpholinocarbenium hexafluorophosphate, COMU, 98%	1075198-30-9
294598	3-(Diethoxyphosphoryloxy)-1,2,3-benzotriazin-4(3H)-one, DEPBT, 98%	165534-43-0
276846	4-(4,6-Dimethoxy-1,3,5-triazin-2-yl)-4-methylmorpholinium chloride, DMTMM, 97.5%	3945-69-5
325632	Diphenylphosphinic chloride, 98%	1499-21-4
615769	Dipyrrolidino(N-succinimidyloxy)carbenium hexafluorophosphate, 98%	207683-26-9
207005	N-Ethoxycarbonyl-2-ethoxy-1,2-dihydroquinoline, EEDQ, 99%	16357-59-8
303005	1-Hydroxy-7-azabenzotriazole, HOAt, 98%	39968-33-7
191943	1-Hydroxybenzotriazole hydrate, HOBt hydrate, 98%	123333-53-9
110209	N-Hydroxyphthalimide, 98%	524-38-9
117997	N-Hydroxysuccinimide, HOSu, 98%	6066-82-6
183144	N-Hydroxysulfosuccinimide sodium salt, Sulfo-NHS, 98%	106627-54-7
145125	Pentafluorophenol, 99%	771-61-9
251897	N-Phenyl bis(trifluoromethanesulfonyl)imide, 98%	37595-74-7
244874	Trifluoromethanesulfonic anhydride, 98%	358-23-6

# Green Reagents

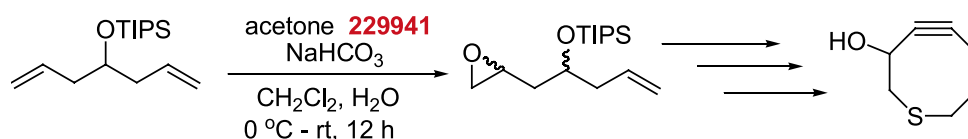
We understand that chemistry is a tool for scientific research and manufacturing, but this tool comes with a duty to make our world a better place – one with cleaner oceans, fresher air and safer food. J&K is proud to provide environmentally friendly green reagents, including synthetic reagents, solvents, catalysts & ligands.

## ■ Green Synthetic Reagents

### • Featured Products:

1. Caro's acid (Potassium peroxomonosulfate, 4.5% active oxygen, 229941, 37222-66-5)

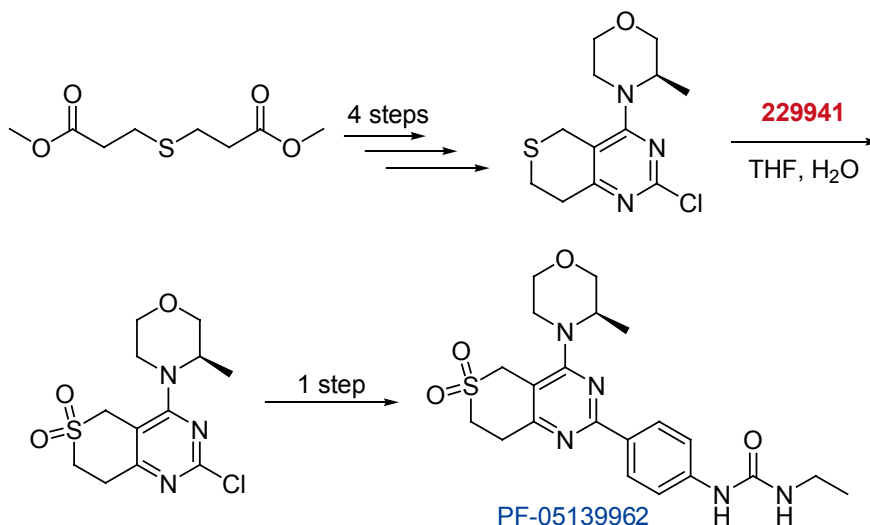
1.1 Caro's acid with acetone for epoxide formation:



## References

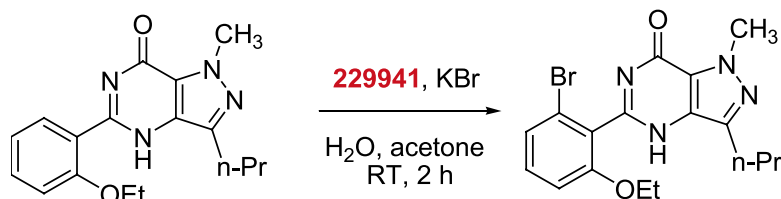
de Almeida G, Sletten E M, Nakamura H, et al. *Angew. Chem. Int. Ed.*, **2012**, 51(10), 2443-2447.

1.2 Caro's acid for sulfone formation:



Liu K K C, Bailey S, Dinh D M, et al. *Bioorg. Med. Chem. Lett.*, **2012**, 22(15), 5114-5117.

1.3 Caro's acid with MX for C-X formation:

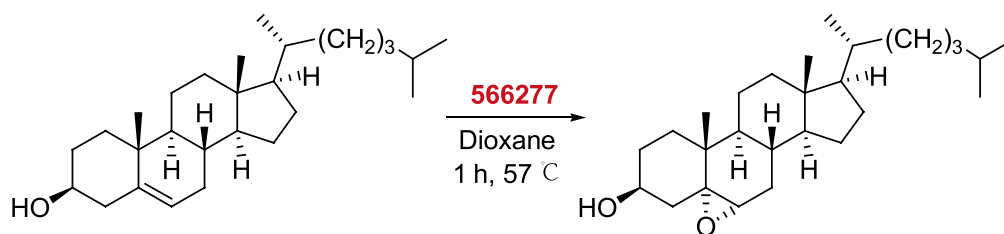


## References

Shavnya A, Coffey S B, Smith A C, et al. *Org. Lett.*, **2013**, 15(24), 6226-6229.

2. MMPP (Magnesium bis(monoperoxyphthalate) hexahydrate, 70%, 566227, 84665-66-7 )

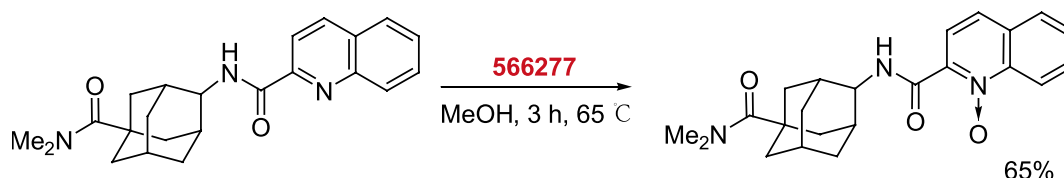
2.1 MMPP for epoxide formation:



#### References

Carvalho J F S, Silva M M C, e Melo M L S. *Tetrahedron*, **2010**, 66(13), 2455-2462.

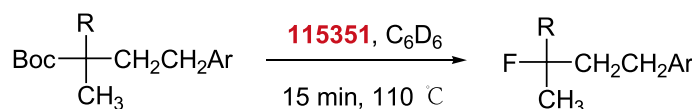
2.2 MMPP for N-Oxide formation:



#### References

PCT Int. Appl., **2012**, 169863

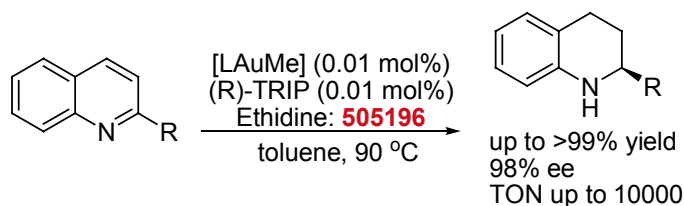
3. NFSI(N-Fluorobenzenesulfonimide, 98%, 115351, 133745-75-2) for fluorination:



#### References

Rueda-Becerril M, Chatalova Sazepin C, Leung J C T, et al. *J. Am. Chem. Soc.*, **2012**, 134(9), 4026-4029.

4. Hantzsch ethyl ester (Diethyl 1,4-dihydro-2,6-dimethyl-3,5-pyridinedicarboxylate, 98%, 505196, 1149-23-1) for reduction:

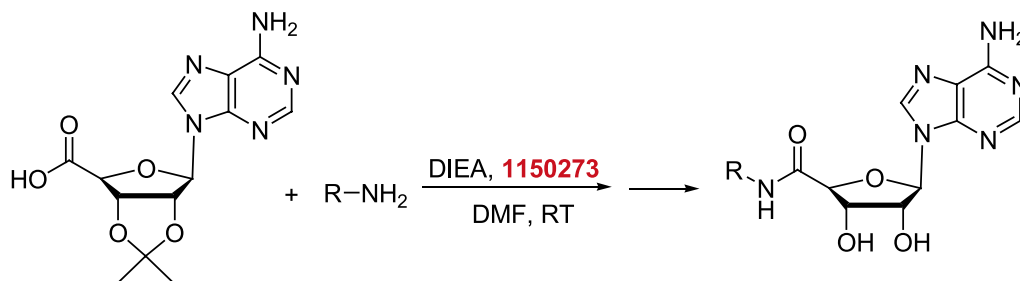


#### References

Tu X F, Gong L Z. *Angew. Chem. Int. Ed.*, **2012**, 51(45), 11346-11349.

## Green Reagents

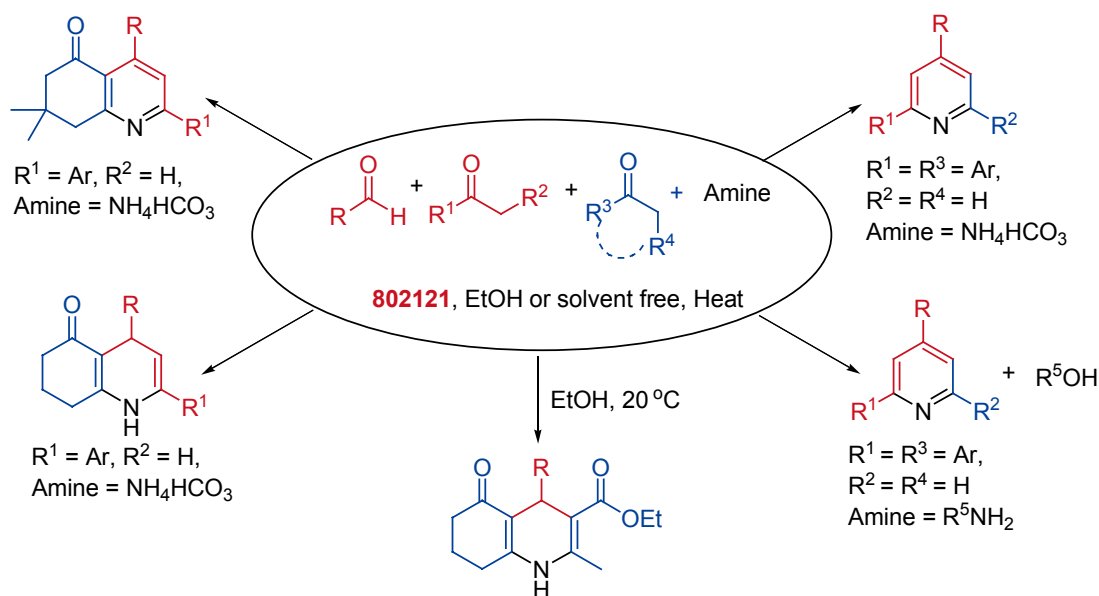
5. COMU((1-Cyano-2-ethoxy-2-oxoethylideneaminoxy)dimethylamino-morpholino-carbenium hexafluorophosphate, 98%, 1150273, 1075198-30-9) for amide formation:



## References

Tosh D K, Phan K, Gao Z G, et al. J. Med. Chem., **2012**, 55(9), 4297-4308.

6. DPAT (Diphenylammoniumtrifluoromethanesulfonate, 98%, 802121, 164411-06-7) for one pot ring closing:



## References

Li J, He P, Yu C. Tetrahedron, **2012**, 68(22), 4138-4144.

■ Amide Formation

Cat. No.	Description	CAS
180331	N,N'-Carbonyldiimidazole, CDI, 98%	530-62-1
260292	2-Chloro-4,6-dimethoxy-1,3,5-triazine, CDMT, 97%	3140-73-6
102492	2-Chloro-1-methylpyridinium iodide, Mukaiyama reagent, 97%	14338-32-0
1150273	(1-Cyano-2-ethoxy-2-oxoethylideneaminoxy)	1075198-30-9
211112	N-(3-Dimethylaminopropyl)-N'-ethylcarbodiimide-hydrochloride, EDCI, 99%	25952-53-8
191243	N,N'-Disuccinimidyl carbonate, SuOCOOSu, 99%	74124-79-1
190359	Isobutyl chloroformate, i-BuOCOCl, 98%	543-27-1
293019	N,N,N',N'-Tetramethylfluoroformamidinium hexafluorophosphate, TFFH, 97%	164298-23-1

## ■ C-X Formation

Cat. No.	Description	CAS
587039	Benzyltrimethylammonium dichloroiodate, 98%	114971-52-7
942961	Bis(2-methoxyethyl)aminosulphur trifluoride, 95%	202289-38-1
272873	N-Bromosuccinimide, NBS, 99%	128-08-5
1000173	4-tert-Butyl-2,6-dimethylphenylsulphur trifluoride, 90%	947725-04-4
199549	N-Chlorosuccinimide, NCS, 97.5%	128-09-6
944192	1,3-Dichloro-5,5-dimethyl hydantoin, DCDMH, 68%, available chlorine	118-52-5
946474	1,3-Dichloro-5,5-dimethyl hydantoin, DCDMH, 98%	118-52-5
802121	Diphenylammonium trifluoromethanesulfonate, 98%	164411-06-7
115351	N-Fluorobenzenesulfonimide, 98%	133745-75-2
107860	Iodine monochloride, ICl, 99%	7790-99-0
275643	N-Iodosuccinimide, NIS, 99%	516-12-1
194371	Oxalyl chloride, 98%	79-37-8
197054	Phenyl dichlorophosphate, 97%	770-12-7
580675	Phenyl trimethylammonium tribromide, PhNMe <sub>3</sub> Br <sub>3</sub> , 97%	4207-56-1
229941	Potassium peroxomonosulfate, 4.5% active oxygen	37222-66-5
593050	Pyridiniumtribromide, Py•HBr <sub>3</sub> , 90%	39416-48-3
286332	Sodium hypochlorite, NaClO, 5% available chlorine	7681-52-9
935710	Sodium hypochlorite, NaClO, 13% available chlorine	7681-52-9
499800	Tetramethylammonium fluoride tetrahydrate, 98%	17787-40-5

## ■ Ether Formation

Cat. No.	Description	CAS
292269	1,8-Diazabicyclo[5.4.0]undec-7-ene, DBU, 98%	6674-22-2

## ■ Oxidation and Reduction

Cat. No.	Description	CAS
610284	Catecholborane, 1.0 M solution in THF, J&KSeal	274-07-7
275928	N,N'-Dicyclohexylcarbodiimide, DCC, 99%	538-75-0
505196	Diethyl 1,4-dihydro-2,6-dimethyl-3,5-pyridinedicarboxylate, 98%	1149-23-1
299272	Formic acid, 98%	64-18-6
201085	2-Iodoxybenzoic acid, IBX, stabilized	61717-82-6
566277	Monoperoxyphthalic acid magnesium salt hexahydrate, 70%	84665-66-7
100922	Sodium percarbonate	15630-89-4
162363	Sodium periodate, NaIO <sub>4</sub> , 99%	7790-28-5
266601	Surfur trioxide pyridine complex, 98%, tech., active SO <sub>3</sub> ca. 48 - 50%	26412-87-3
235286	2,2,6,6-Tetramethylpiperidinoxy, TEMPO, 98%	2564-83-2
401569	Urea-Hydrogen peroxide, contains 35 wt.% H <sub>2</sub> O, stabilized	124-43-6



# Green Reagents

- Greener Solvents (including ionic liquid):

2-Methyl-tetrahydrofuran (2-MeTHF) can be derived from renewable resources (e.g. furfural or levulinic acid) and is a promising alternative solvent in the search for environmentally benign synthesis strategies<sup>[1]</sup>.

Cyclopentyl methyl ether (CPME) has been used in chemical synthesis as an alternative to hazardous solvents. Wide synthetic utility and a detailed toxicity study suggest CPME as a green and sustainable solvent of choice for modern chemical transformations<sup>[2]</sup>.

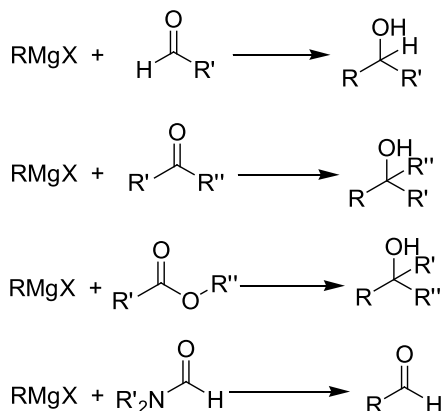
## References

[1] Pace V, Hoyos P, Castoldi L, et al. ChemSus-Chem., **2012**, 5(8), 1369-1379.

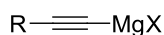
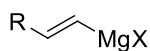
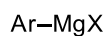
[2] Watanabe K. Molecules, **2013**, 18(3): 3183-3194.

Cat. No.	Description	CAS
913731	Cyclopentyl methyl ether, 99%	5614-37-9
203918	2-Methyltetrahydrofuran, 99%, stabilized with BHT	96-47-9
284814	2-Methyltetrahydrofuran, 99%, SuperDry, J&KSeal	96-47-9

Grignard reagents are very important tools in carbon-carbon bond formation in nucleophilic addition and substitution reactions.



J&K offers a wide variety of Grignard reagents (R=aryl, alkyl, alkenyl, and alkynyl) in J&KSeal packaging:



Cat. No.	Description	CAS
958392	Allylmagnesium bromide, 1.0 M solution in 2-MeTHF, J&KSeal	1730-25-2
356369	Allylmagnesium chloride, 1.7 M solution in THF, J&KSeal	2622-05-1
230899	Benzylmagnesium chloride, 1.4 M solution in THF, J&KSeal	6921-34-2
789070	4-Benzyloxyphenylmagnesium bromide, 1.0 M solution in THF, J&KSeal	120186-59-6
807406	3-Biphenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	103068-18-4
611506	4-Biphenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	3315-91-1
441910	3-Butenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	7103-09-5
266438	2-Butenylmagnesium chloride, 0.5 M solution in THF, J&KSeal	22649-70-3
492679	sec-Butylmagnesium bromide, 1.0 M solution in THF, J&KSeal	922-66-7
177368	n-Butylmagnesium chloride, 2.0 M solution in THF, J&KSeal	693-04-9
362814	sec-Butylmagnesium chloride, 2.0 M solution in THF, J&KSeal	15366-08-2
120466	tert-Butylmagnesium chloride, 1.0 M solution in THF, J&KSeal	677-22-5
966014	tert-Butylmagnesium chloride, 1.7 M solution in THF, J&KSeal	677-22-5
229183	4-tert-Butylphenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	63488-10-8
329391	3-Chlorophenylmagnesium bromide, 0.4 M solution in THF, J&KSeal	36229-42-2
915534	4-Chlorophenylmagnesium bromide, 1.0 M solution in 2-MeTHF, J&KSeal	873-77-8
255046	5-Chloro-2-thienylmagnesium bromide, 0.5 M slurry solution in THF, J&KSeal	111762-30-2
302114	Cyclohexylmagnesium bromide, 1.0 M solution in THF, J&KSeal	931-50-0
807409	Cyclohexylmethylmagnesium bromide, 0.5 M solution in THF, J&KSeal	35166-78-0
905009	Cyclopentylmagnesium bromide, 1.0 M solution in THF, J&KSeal	33240-34-5

# Grignard Reagents

Cat. No.	Description	CAS
615371	Cyclopropylmagnesium bromide, 0.5 M solution in THF, J&KSeal	23719-80-4
992504	Cyclopropylmagnesium bromide, 1.0 M solution in 2-MeTHF, J&KSeal	23719-80-4
146939	3,5-Difluorophenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	62351-47-7
238162	3,4-Dimethoxyphenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	89980-69-8
1119475	3,5-Dimethyl-4-methoxyphenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	185416-17-5
392543	2,5-Dimethylphenylmagnesium bromide, 1.0 M solution in THF, J&KSeal	30897-86-0
473919	1,1-Dimethylpropylmagnesium chloride, 1.0 M solution in 2-MeTHF, J&KSeal	28276-08-6
959102	Ethylmagnesium bromide, 1.0 M solution in tert-butyl methyl ether, J&KSeal	925-90-6
248474	Ethylmagnesium bromide, 1.0 M solution in THF, J&KSeal	925-90-6
929072	Ethylmagnesium bromide, 3.4 M solution in 2-MeTHF, J&KSeal	925-90-6
934269	Ethylmagnesium chloride, 2.0 M solution in THF, J&KSeal	2386-64-3
123714	4-Ethylphenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	22873-28-5
212161	Ethynylmagnesium bromide, 0.5 M solution in THF, J&KSeal	4301-14-8
109954	Ethynylmagnesium chloride, 0.5 M solution in THF, J&KSeal	65032-27-1
186038	4-Fluorophenylmagnesium bromide, 0.8 M solution in THF, J&KSeal	352-13-6
975878	4-Fluorophenylmagnesium bromide, 2.0 M solution in 2-MeTHF, J&KSeal	352-13-6
127192	Hexylmagnesium bromide, 0.8 M solution in THF, J&KSeal	3761-92-0
626700	Hexylmagnesium chloride, 1.8 M solution in THF, J&KSeal	44767-62-6
267806	Isobutylmagnesium chloride, 2.0 M solution in THF, J&KSeal	5674-02-2
613486	Isopropenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	13291-18-4
404940	Isopropylmagnesium bromide, 1.0 M solution in THF, J&KSeal	920-39-8
967342	Isopropylmagnesium bromide, 2.0 M solution in 2-MeTHF, J&KSeal	920-39-8
910136	Isopropylmagnesium bromide, 3.0 M solution in 2-MeTHF, J&KSeal	920-39-8
971212	Isopropylmagnesium chloride, 1.4 M solution in butyl diglyme, J&KSeal	1068-55-9
153900	Isopropylmagnesium chloride, 2.0 M solution in THF, J&KSeal	1068-55-9
991217	Isopropylmagnesium chloride, 2.5 M solution in THF, J&KSeal	1068-55-9
907857	Isopropylmagnesium chloride, 3.0 M solution in 2-MeTHF, J&KSeal	1068-55-9
524459	Isopropylmagnesium chloride-lithium chloride complex, 1.3 M solution in THF, J&KSeal	745038-86-2
1119948	4-Isopropylphenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	18620-03-6
914974	2-Mesitylmagnesium bromide, 1.0 M solution in THF, J&KSeal	2633-66-1
422742	3-Methoxybenzylmagnesium chloride, 0.25 M solution in THF, J&KSeal	26905-40-8
169796	4-Methoxybenzylmagnesium chloride, 0.25 M solution in THF, J&KSeal	38769-92-5
558771	4-Methoxyphenethylmagnesium chloride, 0.5 M solution in THF, J&KSeal	211115-05-8
951377	2-Methoxyphenylmagnesium bromide, 1.0 M solution in THF, J&KSeal	16750-63-3
933621	3-Methoxyphenylmagnesium bromide, 1.0 M solution in THF, J&KSeal	36282-40-3
498418	4-Methoxyphenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	13139-86-1
968791	4-Methoxyphenylmagnesium bromide, 1.0 M solution in THF, J&KSeal	13139-86-1
561909	2-Methylallylmagnesium chloride, 0.5 M solution in THF, J&KSeal	5674-01-1
356569	Methylmagnesium bromide, 1.0 M solution in THF, J&KSeal	75-16-1
948991	Methylmagnesium bromide, 3.0 M solution in 2-MeTHF, J&KSeal	75-16-1
575546	Methylmagnesium chloride, 3.0 M solution in THF, J&KSeal	676-58-4
552634	1-Methyl-1-propenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	85676-85-3

Cat. No.	Description	CAS
611972	2-Methyl-1-propenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	38614-36-7
341175	1-Naphthylmagnesium bromide, 0.25 M slurry solution in THF, J&KSeal	703-55-9
486307	2-Naphthylmagnesium bromide, 0.5 M solution in THF, J&KSeal	21473-01-8
418578	Pentamethylenebis(magnesium bromide), 0.5 M solution in THF, J&KSeal	23708-48-7
208580	Pentylmagnesium bromide, 1.0 M solution in THF, J&KSeal	693-25-4
343268	Pentylmagnesium chloride, 2.0 M solution in THF, J&KSeal	6393-56-2
315354	Phenethylmagnesium chloride, 1.0 M solution in THF, J&KSeal	90878-19-6
168840	Phenylmagnesium bromide, 1.0 M solution in THF, J&KSeal	100-58-3
968141	Phenylmagnesium bromide, 2.9 M solution in 2-MeTHF, J&KSeal	100-58-3
109677	Phenylmagnesium chloride, 2.0 M solution in THF, J&KSeal	100-59-4
337410	Propylmagnesium bromide, 2.0 M solution in THF, J&KSeal	927-77-5
284509	4-n-Propylphenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	87942-08-3
626335	[2-(1-Pyrrolidinylmethyl)phenyl]magnesium bromide, 0.25 M solution in THF, J&KSeal	480424-80-4
987404	Tetradecylmagnesium chloride, 1.0 M solution in THF, J&KSeal	110220-87-6
573688	4-Thioanisolemagnesium bromide, 0.5 M solution in THF, J&KSeal	18620-04-7
561487	m-Tolylmagnesium bromide, 1.0 M solution in THF, J&KSeal	28987-79-3
965413	p-Tolylmagnesium bromide, 1.0 M solution in THF, J&KSeal	4294-57-9
111500	o-Tolylmagnesium chloride, 1.0 M solution in THF, J&KSeal	33872-80-9
789252	3,4,5-Trimethoxyphenylmagnesium bromide, 0.5 M solution in THF, J&KSeal	133095-91-7
399438	(Trimethylsilyl)methylmagnesium chloride, 1.3 M solution in THF, J&KSeal	13170-43-9
978007	Vinylmagnesium bromide, 1.0 M solution in 2-MeTHF, J&KSeal	1826-67-1
309166	Vinylmagnesium bromide, 1.0 M solution in THF, J&KSeal	1826-67-1
230253	Vinylmagnesium chloride, 1.9 M solution in THF, J&KSeal	3536-96-7

# Halogenation Reagents

Halogenation is one of the most fundamental and important processes. Halogenated compounds are of extreme importance as building blocks in organic synthesis. Recently, more halogenated compounds have been used as starting materials in modern syntheses. In response to this situation, many novel halogenating reagents have been developed.

J&K offers a wide range of novel halogenating reagents, which overcome the traditional disadvantages of their use, such as strict handling, and meet requirements for safe and environmentally responsible synthesis.

## ■ Fluorination

Cat. No.	Description	CAS
1000173	4-tert-Butyl-2,6-dimethylphenylsulfur trifluoride, 90%	947725-04-4
299386	N-Chloromethyl-N'-fluorotriethylenediammonium bis(tetrafluoroborate), 96%	140681-55-6
168478	Diethylaminosulfur trifluoride, 95%	38078-09-0
397102	2,2-Difluoro-2-(fluorosulfonyl)acetic acid, 98%	1717-59-5
1236812	Difluoromethyl phenyl sulfone, 98%	1535-65-5
115351	N-Fluorobenzenesulfonimide, 98%	133745-75-2
322858	Hydrogen fluoride-pyridine, 70% HF	62778-11-4
210460	Methyl 2,2-difluoro-2-(fluorosulfonyl)acetate, 98%	680-15-9
544572	Silver(I) fluoride, 99%	7775-41-9
370807	Sodium trifluoromethanesulfinate, 97%	2926-29-6
942516	Tetrabutylammonium dihydrogentrifluoride, 90%	99337-56-1
915029	Tetrabutylammonium fluoride, 75 wt.% solution in H <sub>2</sub> O	429-41-4
995821	Tetrabutylammonium fluoride, 1.0 M solution in THF, containing ca. 5% H <sub>2</sub> O, J&KSeal	429-41-4
499800	Tetramethylammonium fluoride tetrahydrate, 98%	17787-40-5
293019	N,N,N',N'-Tetramethylfluoroformamidinium hexafluorophosphate, 97%	164298-23-1
112923	Triethylamine trihydrofluoride, 98%	73602-61-6
154791	2,2,2-Trifluoroethyl trifluoromethanesulfonate, 97%	6226-25-1
432354	Trifluoromethanesulfonimide, 99%	82113-65-3
1350768	1-Trifluoromethyl-1,2-benziodoxol-3-(1H)-one, 98%	887144-94-7
236310	5-(Trifluoromethyl)dibenzothiophenium tetrafluoroborate, 97%	131880-16-5
169812	5-(Trifluoromethyl)dibenzothiophenium trifluoromethanesulfonate, 97%	129946-88-9
807677	1-Trifluoromethyl-3,3-dimethyl-1,2-benziodoxole, 97%	887144-97-0
473882	(Trifluoromethyl)trimethylsilane, 98%	81290-20-2
397101	Trimethylsilyl 2,2-difluoro-2-(fluorosulfonyl)acetate, 90%	120801-75-4

## ■ Chlorination

Cat. No.	Description	CAS
200969	Benzyltrimethylammonium tetrachloriodate, 97%	121309-88-4
270418	N-Chlorobenzenesulfonamide sodium salt, 98%	127-52-6
199549	N-Chlorosuccinimide, 97.5%	128-09-6
951043	Cyanuric chloride, 99%	108-77-0
401322	1,1-Dichlorodimethyl ether, 97%	4885-02-3
245234	Dichloroisocyanuric acid, sodium salt, 97.5%	2893-78-9
323009	Methoxyacetyl chloride, 95%	38870-89-2
174331	Sodium p-toluenesulfonchloramide trihydrate, 97%	7080-50-4
142257	Trichloroisocyanuric acid, 98.5%	87-90-1

## ■ Bromination

Cat. No.	Description	CAS
324050	Bromine, 1.0 M solution in acetic acid, J&KSeal	7726-95-6
272873	N-Bromosuccinimide, 99%	128-08-5
616073	1,8-Diazabicyclo[5.4.0]-7-undecene hydrogen tribromide, 98%	138666-59-8
1706919	5,5-Dibromo-2,2-dimethyl-4,6-dioxo-1,3-dioxane, 98%	66131-14-4
569341	1,3-Dibromo-5,5-dimethylhydantoin, 98%	77-48-5
295107	Dibromoisocyanuric acid, 97%	15114-43-9
556552	4-Dimethylaminopyridinium bromide perbromide, 98%	92976-81-3
593050	Pyridinium tribromide, 90%	39416-48-3
289932	Tetrabutylammonium tribromide, 98%	38932-80-8

## ■ Iodination

Cat. No.	Description	CAS
587039	Benzyltrimethylammonium dichloriodate, 98%	114971-52-7
422219	Bis(pyridine)iodonium tetrafluoroborate, 97%	15656-28-7
203428	Diiodomethane, 99%, stabilized	75-11-6
275643	N-Iodosuccinimide, 99%	516-12-1
969218	Iodotrimethylsilane, 1.0 M solution in methylene chloride	16029-98-4
930720	Iodotrimethylsilane, 98%, stabilized with copper, J&KSeal	16029-98-4

# Ionic Liquids

An ionic liquid (IL) is a salt in liquid state. In some contexts, the term ionic liquid has been restricted to salts with a melting point below some arbitrary temperature (sometimes 100 °C (212 °F)). Based on the unique properties of ionic liquids such as low vapor pressure, liquidity over a wide temperature range, high thermal stability, ionic conductivity, structural design and the ability to dissolve many chemical species, the applications of IL have inspired a green revolutionary change in chemistry and chemical engineering in the past decade. Research involving ionic liquids touches upon nearly every branch of chemistry and material science, including catalysis, organic synthesis, separation and analysis, electrochemistry, material chemistry, pretreatment of biomass, energy technology, as well as many others<sup>[1]</sup>.

J&K offers different types of ionic liquids with unique properties:

- Low water content
- High purity
- High diversity: Many kinds of cation (e.g. imidazolium) in combination with different anions

## References

[1] Qinghua Zhang and Jean'ne M. Shreeve, Chem. Rev. 2014, 114, 10527–10574.

### ■ Imidazolium Cation

Cat. No.	Description	CAS
170696	1-Allyl-3-methylimidazolium bromide, [AMIM]Br, 99%	31410-07-8
481134	1-Allyl-3-methylimidazolium chloride, [AMIM]Cl, 98%	65039-10-3
802091	1-Butyl-2,3-dimethylimidazolium bis(trifluoromethanesulfonyl)imide, [BDiMIM][BTI], 98%	350493-08-2
410884	1-Butyl-2,3-dimethylimidazolium chloride, [BDiMIM]Cl, 99%	98892-75-2
137172	1-Butyl-2,3-dimethylimidazolium hexafluorophosphate, [BDiMIM]PF <sub>6</sub> , 99%	227617-70-1
211464	1-Butyl-2,3-dimethylimidazolium tetrafluoroborate, [BDiMIM]BF <sub>4</sub> , 99%	402846-78-0
111199	1-Butyl-2,3-dimethylimidazolium trifluoromethanesulfonate, [BDiMIM]Otf, 98%	765910-73-4
254794	1-Butyl-3-methylimidazolium bromide, [BMIM]Br, 99%	85100-77-2
174287	1-Butyl-3-methylimidazolium chloride, [BMIM]Cl, 99%	79917-90-1
117517	1-Butyl-3-methylimidazolium dicyanamide, [BMIM][DCA], 97%	448245-52-1
124582	1-Butyl-3-methylimidazolium hexafluorophosphate, [BMIm]PF <sub>6</sub> , 99%	174501-64-5
537909	1-Butyl-3-methylimidazolium iodide, [BMIM]I, 95%	65039-05-6
588197	1-Butyl-3-methylimidazolium methanesulfonate, 95%	342789-81-5
244517	1-Butyl-3-methylimidazolium nitrate, [BMIM]NO <sub>3</sub> , 99%	179075-88-8
200836	1-Butyl-3-methylimidazolium tetrafluoroborate, [BMIm]BF <sub>4</sub> , 99%	174501-65-6
523922	1-Butyl-3-methylimidazolium trifluoromethanesulfonate, [BMIm]Otf, 99%	174899-66-2
795589	1-Decyl-3-methylimidazolium tetrafluoroborate, [DMIM]BF <sub>4</sub> , 97%	244193-56-4
1392042	1,3-Dimethylimidazolium iodide, [DiMIM]I, 98%	4333-62-4
624030	2,3-Dimethyl-1-propylimidazolium bis(trifluoromethanesulfonyl)imide, [DMPiIm][BTI], 95%	169051-76-7
934466	1,2-Dimethyl-3-propylimidazolium iodide, [DMPiIm]I, 98%	218151-78-1
262493	1-Ethyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide, [EMIM][BTI], 99%	174899-82-2
161454	1-Ethyl-3-methylimidazolium bromide, [EMIM]Br, 98%	65039-08-9
528603	1-Ethyl-3-methylimidazolium chloride, [EMIM]Cl, 96%	65039-09-0
288063	1-Ethyl-3-methylimidazolium dicyanamide, [EMIM][DCA], 99%	370865-89-7
807274	1-Ethyl-3-methylimidazolium diethyl phosphate, [EMIM][DEP], 98%	848641-69-0
468618	1-Ethyl-3-methylimidazolium ethyl sulfate, 99%	342573-75-5
226394	1-Ethyl-3-methylimidazolium hexafluorophosphate, [EMIM]PF <sub>6</sub> , 99%	155371-19-0
191384	1-Ethyl-3-methylimidazolium hydrogen sulfate, 98%	412009-61-1
576284	1-Ethyl-3-methylimidazolium iodide, [EMIM]I, 98%	35935-34-3
191819	1-Ethyl-3-methylimidazolium tetrafluoroborate, [EMIM]BF <sub>4</sub> , 99%	143314-16-3

Cat. No.	Description	CAS
436031	1-Ethyl-3-methylimidazolium trifluoromethanesulfonate, [EMIM]OTf, 99%	145022-44-2
1014729	1-Hexadecyl-3-methylimidazolium bromide, [EMIM]Br, 99%	132361-22-9
1014730	1-Hexadecyl-3-methylimidazolium tetrafluoroborate, [HMIM]BF <sub>4</sub> , 99%	244193-64-4
273871	1-Hexyl-3-methylimidazolium bis(trifluoromethanesulfonyl)imide, [HMIM][BTI], 98%	382150-50-7
440636	1-Hexyl-3-methylimidazolium bromide, [HMIM]Br, 98%	85100-78-3
160805	1-Hexyl-3-methylimidazolium hexafluorophosphate, [HMIM]PF <sub>6</sub> , 99%	304680-35-1
150982	1-Hexyl-3-methylimidazolium tetrafluoroborate, [HMIM]BF <sub>4</sub> , 99%	244193-50-8
148235	1-Methylimidazolium chloride, [MIM]Cl, 95%	35487-17-3
606047	1-Methyl-3-octylimidazolium tetrafluoroborate, [OMIM]BF <sub>4</sub> , 99%	244193-52-0
938393	1-Methyl-3-propylimidazolium iodide, [MPIIm]I, 95%	119171-18-5
395238	1-Octyl-3-methylimidazolium chloride, [OMIM]Cl, 98%	64697-40-1
342045	1-Octyl-3-methylimidazolium hexafluorophosphate, [OMIM]PF <sub>6</sub> , 98%	304680-36-2
921283	1-Propyl-3-methylimidazolium bis(trifluoromethylsulfonyl)imide, [PMIM][BTI], 98%	216299-72-8

■ Pyridinium Cation

Cat. No.	Description	CAS
311898	1-Butylpyridinium bromide, [Bpy]Br, 99%	874-80-6
609588	1-Butylpyridinium chloride, [Bpy]Cl, 98%	1124-64-7
615339	1-Butylpyridinium hexafluorophosphate, [Bpy]PF <sub>6</sub> , 99%	186088-50-6
167780	1-Butylpyridinium tetrafluoroborate, [Bpy]BF <sub>4</sub> , 99%	203389-28-0
296416	N-Ethylpyridinium bromide, 98%	1906-79-2
316447	1-Hexylpyridinium chloride, [Hpy]Cl, 97%	6220-15-1

■ Pyrrolidinium Cation

Cat. No.	Description	CAS
212683	1-Butyl-1-methylpyrrolidinium bis(trifluoromethylsulfonyl)imide, 99%	223437-11-4
618408	1-Butyl-1-methylpyrrolidinium bromide, BMPyrrBr, 99%	93457-69-3
623754	1-Butyl-1-methylpyrrolidinium chloride, BMPyrrCl, 99%	479500-35-1
618548	1-Butyl-1-methylpyrrolidinium dicyanamide, [BMPyrr][DCA], 97%	370865-80-8
559490	1-Butyl-1-methylpyrrolidinium trifluoromethylsulfonate, BMPyrrOTf, 95%	367522-96-1

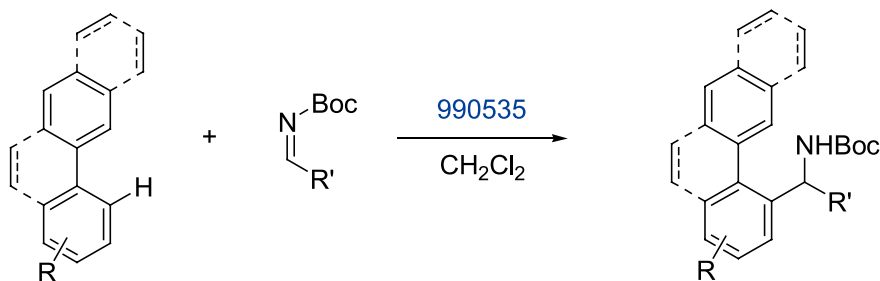
■ Quaternary Ammonium Salt Cation

Cat. No.	Description	CAS
618463	Methyl tri-n-octylammonium bis(trifluoromethanesulfonyl)imide, 98%	375395-33-8
115720	Methyltrioctylammonium chloride, 98%	5137-55-3
238357	Tetrabutylammonium bromide, TBAB, 99%	1643-19-2
139741	Tetrabutylammonium chloride, TBAC, 95%	1112-67-0
283559	Tetra-n-butylammonium hexafluorophosphate, [TBA]PF <sub>6</sub> , 99%	3109-63-5
113171	Tetrabutylammonium hydrogen sulfate, 99%	32503-27-8
183969	Tetrabutylammonium iodide, TBAI, 99%	311-28-4
160584	Tetrabutylammonium nitrate, [TBA]NO <sub>3</sub> , 97%	1941-27-1
193720	Tetrabutylammonium tetrafluoroborate, [TBA]BF <sub>4</sub> , 98%	429-42-5



# Lewis Acids

As electron pair acceptors, Lewis acids (LAs) are widely used in organic synthesis. As catalysts, Lewis acids have been successfully used in Mannich reactions, Friedel-Crafts reactions, re-arrangement reactions, synthesis of  $\alpha$ -amino acids, formation of quinoline rings, ester exchange reactions and Diels-Alder reactions.



## References

Tsai, A. S.; Tauchert, M. E.; et al. *J. Am. Chem. Soc.*, **2011**, 133 (5), 1248–1250.

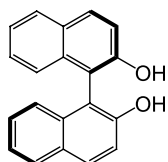
Cat. No.	Description	CAS
575615	Aluminum bromide, anhydrous, 98%	7727-15-3
290063	Aluminum chloride, 99%, trace metals basis, 99%	7446-70-0
969897	Boron trichloride, 1.0 M solution in hexanes, J&KSeal	10294-34-5
548396	Boron trifluoride acetic acid complex, 35% BF <sub>3</sub>	373-61-5
618627	Boron trifluoride acetonitrile complex, 19% BF <sub>3</sub>	420-16-6
623121	Boron trifluoride dimethanol complex, 50 - 52 wt.% BF <sub>3</sub>	2802-68-8
207862	Boron trifluoride methanol, 50 wt.% solution in MeOH	373-57-9
460109	Iron(III) bromide, 97%	10031-26-2
549006	Iron(III) chloride, 98%	7705-08-0
918988	Iron(III) chloride hexahydrate, 97%, ACS reagent	10025-77-1
990535	Silver hexafluoroantimonate, 98%	26042-64-8
174441	Silver trifluoromethanesulfonate, 98%	2923-28-6
980247	Tin(IV) chloride, 1.0 M solution in heptane, J&KSeal	7646-78-8
991963	Tin(IV) chloride, 1.0 M solution in methylene chloride, J&KSeal	7646-78-8
467102	Tin(IV) chloride, 99%	7646-78-8
488602	Tin(IV) chloride pentahydrate, 98%	10026-06-9
459124	Titanium(IV) chloride, 1 M solution in dichloromethane, J&KSeal	7550-45-0
103315	Zinc chloride, 0.7 M solution in THF, J&KSeal	7646-85-7
293489	Zirconium(IV) chloride, 98%, anhydrous	10026-11-6

J&K carries an extensive line of ligands include phosphorus ligands, chiral binaphthyl ligands, NHC ligands, N-O compounds and so on. They featured in

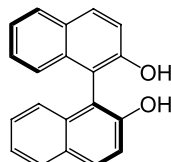
1. Cutting-edge
2. Exclusivity, many of them act as the exclusive supplier, for example: N-O compounds

#### ■ Chiral Binaphthyl Ligands

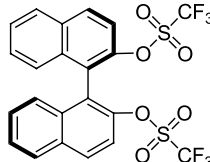
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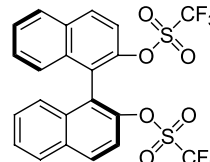
465318



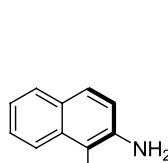
324259



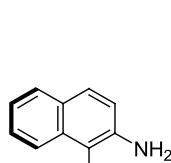
324260



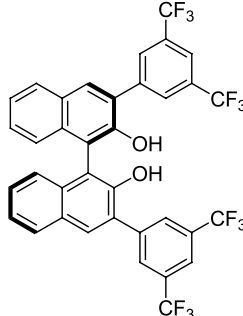
434864



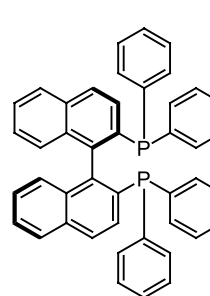
434863



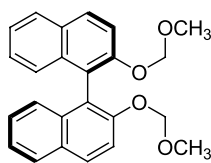
789130



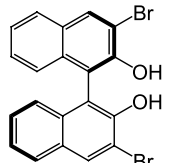
903287



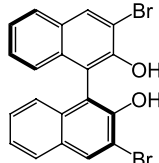
449016



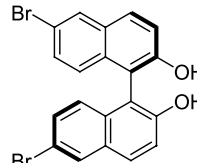
511041



511039

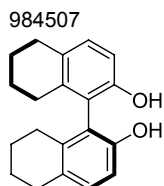
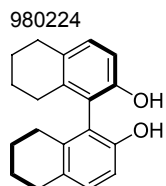
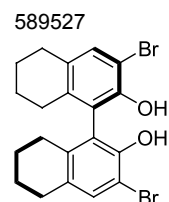
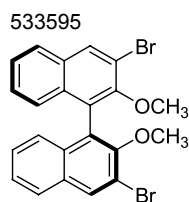
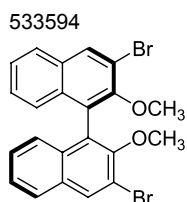
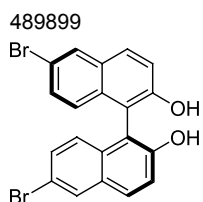


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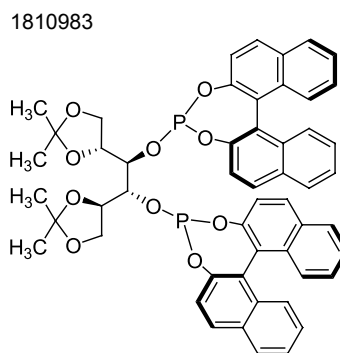
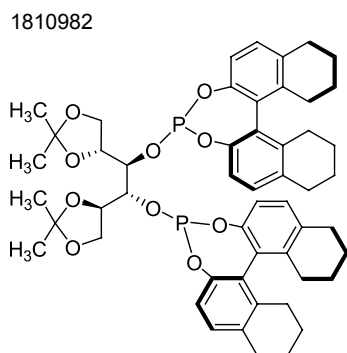
Cat. No.	Description	CAS
465317	(R)-(+)-1,1'-Bi-2,2'-naphthol, 99%	18531-94-7
465318	(S)-(-)-1,1'-Bi-2,2'-naphthol, 99%	18531-99-2
324259	(R)-(-)-1,1'-Bi-2,2'-naphtholbis(trifluoromethanesulfonate), 97%	126613-06-7
324260	(S)-(+)-1,1'-Bi-2,2'-naphtholbis(trifluoromethanesulfonate), 97%	128544-05-8
434864	(R)-(+)-1,1'-Binaphthyl-2,2'-diamine, 99%	18741-85-0
434863	(S)-(-)-1,1'-Binaphthyl-2,2'-diamine, (S)-(-)-DABN, 99%	18531-95-8
789130	(R)-(+)-3,3'-Bis(3,5-bis(trifluoromethyl)phenyl)-1,1'-bi-2-naphthol, 95%	756491-54-0
903287	(R)-(+)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl, (R)-(+)-BINAP, 98%	76189-55-4
449016	(R)-(+)-2,2'-Bis(methoxymethoxy)-1,1'-binaphthalene, 97%	173831-50-0
511041	(R)-(+)-3,3'-Dibromo-1,1'-bi-2,2'-naphthol, 97%	111795-43-8
511039	(S)-(-)-3,3'-Dibromo-1,1'-bi-2,2'-naphthol, 97%	119707-74-3
489901	(R)-(-)-6,6'-Dibromo-1,1'-bi-2,2'-naphthol, 98%	65283-60-5

## Ligands



Cat. No.	Description	CAS
489899	(S)-(+)-6,6'-Dibromo-1,1'-bi-2,2'-naphthol, 98%	80655-81-8
533594	(R)-3,3'-Dibromo-2,2'-dimethoxy-1,1'-binaphthyl, 98%	75714-59-9
533595	(S)-3,3'-Dibromo-2,2'-dimethoxy-1,1'-binaphthyl, 98%	75714-60-2
589527	(R)-(+)-3,3'-Dibromo-5,5',6,6',7,7',8,8'-octahydro-1,1'-bi-2,2'-naphthol, 97%	65355-08-0
980224	(R)-(+)-5,5',6,6',7,7',8,8'-Octahydro-1,1'-bi-2,2'-naphthol, 99%	65355-14-8
984507	(S)-(-)-5,5',6,6',7,7',8,8'-Octahydro-1,1'-bi-2,2'-naphthol, 99%	65355-00-2

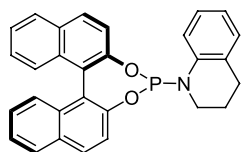
#### ■ Chiral Phosphite Ligands



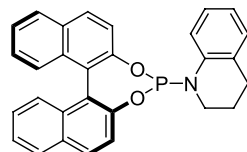
Cat. No.	Description	CAS
1810982	1,2:5,6-Di-O-isopropylidene-3,4-bis[(R)-1,1'-H8-binaphthyl-2,2'-diyl]phosphite-dmannitol	1272671-13-2
1810983	1,2:5,6-Di-O-isopropylidene-3,4-bis[(R)-1,1'-binaphthyl-2,2'-diyl]phosphite-dmannitol	1272671-11-0

## ■ Chiral Phosphoramidite Ligands

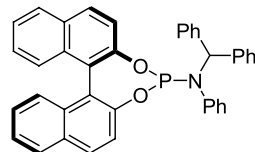
1809346



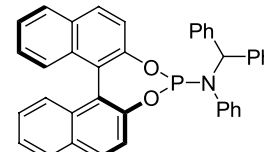
1809347



1809348



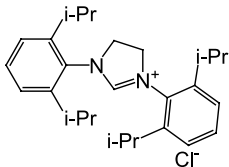
1809349



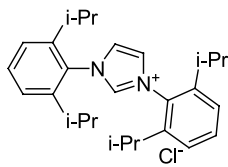
Cat. No.	Description	CAS
1809346	1-[(11bR)-Dinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphepin-4-yl]-1,2,3,4-tetrahydroquinoline, (R)-THQphos, 98%	1360145-09-0
1809347	1-[(11bS)-Dinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphepin-4-yl]-1,2,3,4-tetrahydroquinoline, (S)-THQphos, 98%	N/A
1809348	(11bR)-N-Benzhydryl-N-phenyldinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphepin-4-amine, (R)-BHPphos, 98%	1360145-10-3
1809349	(11bS)-N-Benzhydryl-N-phenyldinaphtho[2,1-d:1',2'-f][1,3,2]dioxaphosphepin-4-amine, (S)-BHPphosa, 98%	1435947-11-7

## ■ NHC Ligands

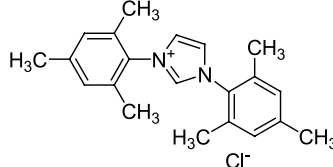
453181



308147



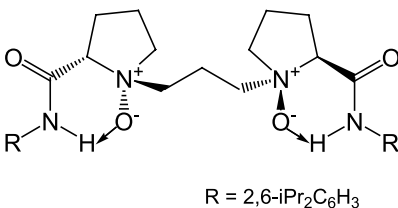
294250



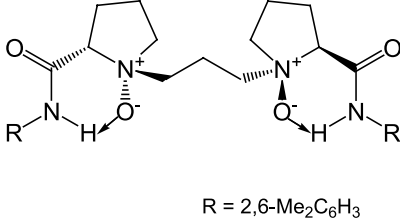
Cat. No.	Description	CAS
453181	1,3-Bis(2,6-diisopropylphenyl)imidazolium chloride, 90%	258278-25-0
308147	1,3-Bis(2,6-diisopropylphenyl)imidazolium chloride, 97%	250285-32-6
294250	1,3-Bis(2,4,6-trimethylphenyl)imidazolium chloride, 97%	141556-45-8

## ■ Chiral N-O Compounds

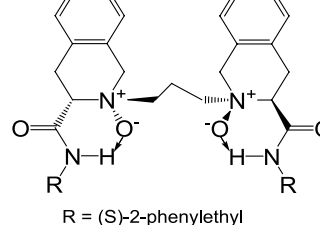
1595283



1595284

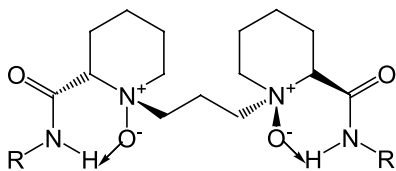


1595289

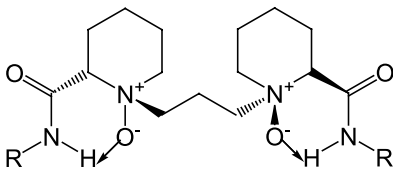


## Ligands

1595285

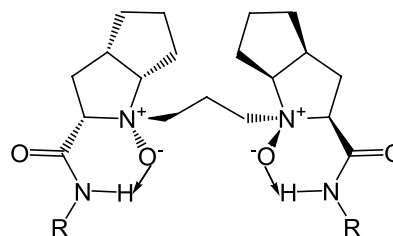
R = 2,6-iPr<sub>2</sub>C<sub>6</sub>H<sub>3</sub>

1595286

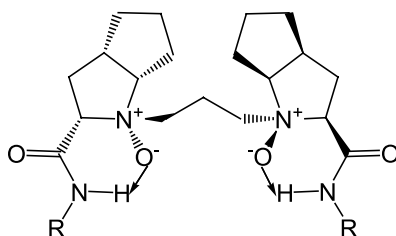


R = 2,4,6-trimethylphenyl

1595287

R = 2,6-iPr<sub>2</sub>C<sub>6</sub>H<sub>3</sub>

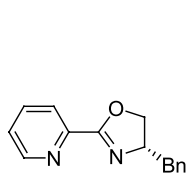
1595288

R = 2,6-Me<sub>2</sub>C<sub>6</sub>H<sub>3</sub>

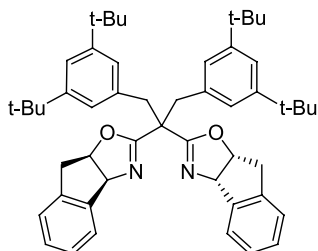
Cat. No.	Description	CAS
1595283	NO-Feng-PDiPPPy, 99%	945564-85-2
1595284	NO-Feng-PDMPPy, 99%	1330533-36-2
1595289	NO-Feng-P2-PETiQ, 99%	N/A
1595285	NO-Feng-PDiPPPi, 99%	1000051-40-0
1595286	NO-Feng-PTMPPP, 99%	1310585-10-4
1595287	NO-Feng-PDiPPRa, 99%	1005495-74-8
1595288	NO-Feng-PDMPPra, 99%	1132049-44-5

## ■ Oxazolin Ligands

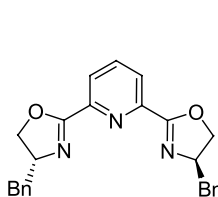
1682831



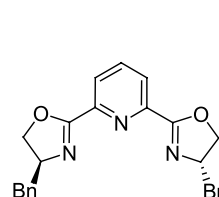
1579646



1711235

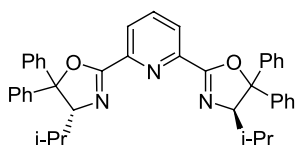


1711240

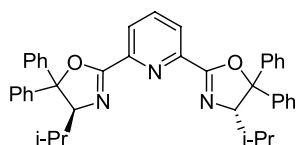


Cat. No.	Description	CAS
1682831	(S)-2-(4-Benzyl-4,5-dihydro-oxazol-2-yl)pyridine, 95%	108915-08-8
1579646	(S,R)-BDTBIn-SaBOX, 99%	1435467-29-0
1711235	2,6-Bis[(4R)-benzyl-2-oxazolin-2-yl]pyridine, 98%	365215-38-9
1711240	2,6-Bis[(4S)-benzyl-2-oxazolin-2-yl]pyridine, 98%	151670-69-8

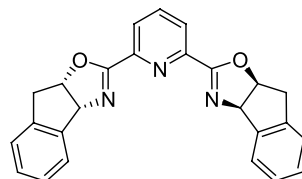
976449



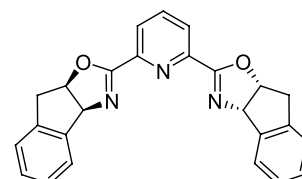
976448



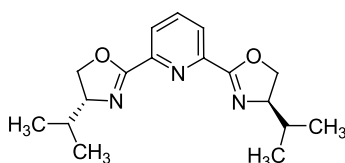
789106



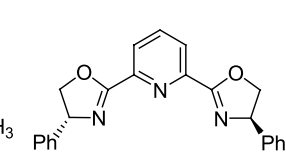
554626



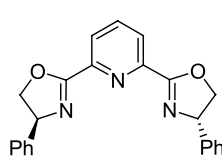
353382



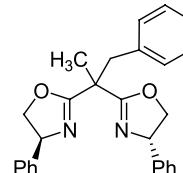
299174



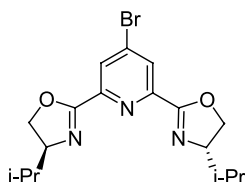
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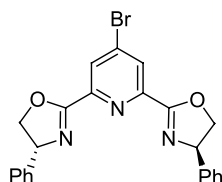
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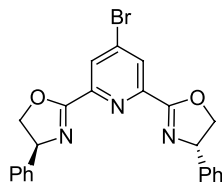
1762608



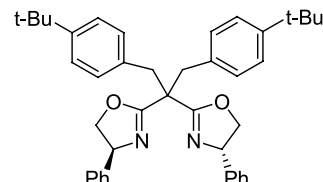
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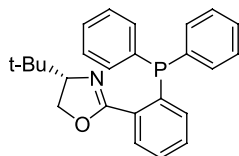
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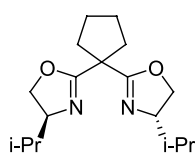
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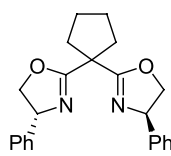
807430



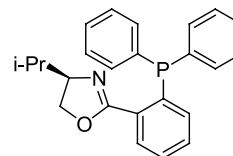
1561126



1561128



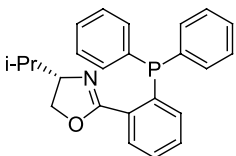
547197



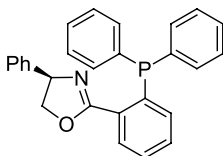
Cat. No.	Description	CAS
976449	2,6-Bis[(4R)-4,5-dihydro-4-(1-methylethyl)-5,5-diphenyl-2-oxazolyl]-pyridine, 98%	828918-24-7
976448	2,6-Bis[(4S)-4,5-dihydro-4-(1-methylethyl)-5,5-diphenyl-2-oxazolyl]-pyridine, 98%	162213-03-8
789106	2,6-Bis[(3aR,8aS)-(+)-8H-indeno[1,2-d]oxazolin-2-yl]pyridine, 95%	357209-32-6
554626	2,6-Bis[(3aS,8aR)-(-)-8H-indeno[1,2-d]oxazolin-2-yl]pyridine, 95%	185346-09-2
353382	2,6-Bis[(4R)-(+)-isopropyl-2-oxazolin-2-yl]pyridine, 98%	131864-67-0
299174	2,6-Bis[(4R)-4-phenyl-2-oxazolyl]pyridine, 98%	128249-70-7
473095	2,6-Bis[(4S)-4-phenyl-2-oxazolyl]pyridine, 98%	174500-20-0
1579642	(S)-BnPh-SaBOX, 98.5%	1404433-37-9
1762608	4-Bromo-2,6-bis[(4S)-4,5-dihydro-4-(1-methylethyl)-2-oxazolyl]-pyridine, 95%	477351-96-5
1710788	4-Bromo-2,6-bis[(4R)-4,5-dihydro-4-phenyl-2-oxazolyl]-pyridine, 95%	618863-43-7
1710789	4-Bromo-2,6-bis[(4S)-4,5-dihydro-4-phenyl-2-oxazolyl]-pyridine, 95%	1190936-03-8
1579645	(S)-BTBBPh-SaBOX, 99%	1428328-51-1
807430	(S)-4-tert-Butyl-2-[2-(diphenylphosphino)phenyl]-2-oxazoline, 97%	148461-16-9
1561126	(4S,4'S)-2,2'-(Cyclopentane-1,1-diyl)-bis(4-isopropyl-4,5-dihydrooxazole), 95%	1379452-52-4
1561128	(4R,4'R)-2,2'-(Cyclopentane-1,1-diyl)-bis(4-phenyl-4,5-dihydrooxazole), 95%	1246401-49-9
547197	(R)-(+)-2-[2-(Diphenylphosphino)phenyl]-4-isopropyl-2-oxazoline, 98%	164858-78-0

## Ligands

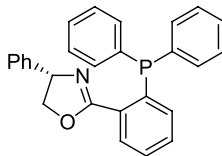
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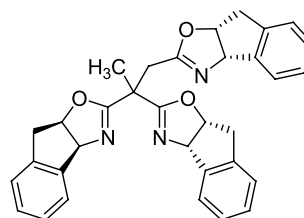
618984



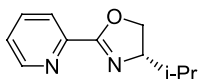
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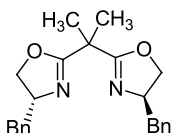
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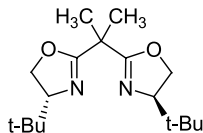
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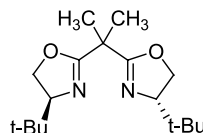
620798



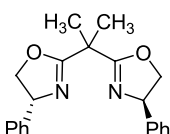
297005



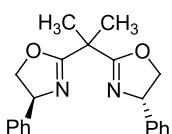
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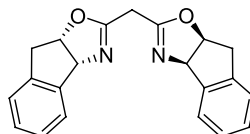
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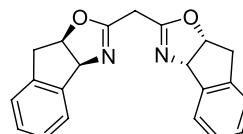
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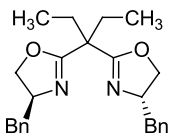
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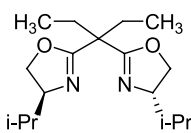
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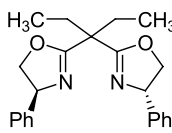
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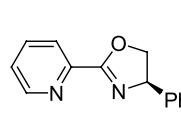
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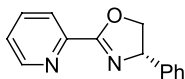
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1729957



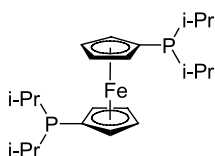
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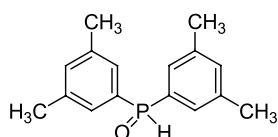
Cat. No.	Description	CAS
177081	(S)-(-)-2-[2-(Diphenylphosphino)phenyl]-4-isopropyl-2-oxazoline, 97%	148461-14-7
618984	(R)-(-)-2-[2-(Diphenylphosphino)phenyl]-4-phenyl-2-oxazoline, 97%	167171-03-1
302583	(S)-(+)-2-[2-(Diphenylphosphino)phenyl]-4-phenyl-2-oxazoline, 97%	148461-15-8
1579639	(S,R)-In-TOX, 98%	1239015-11-2
1682827	(S)-2-(4-Isopropyl-4,5-dihydro-oxazol-2-yl)-pyridine, 95%	108915-04-4
620798	(+)-2,2'-Isopropylidenebis[(4R)-4-benzyl-2-oxazoline], 98%	141362-77-8
297005	(R,R)-(+)-2,2'-Isopropylidenebis(4-tertbutyl-2-oxazoline), 98%	131833-97-1
211207	(S,S)-(-)-2,2'-Isopropylidenebis(4-tertbutyl-2-oxazoline), 98%	131833-93-7
501941	(+)-2,2'-Isopropylidenebis[(4R)-4-phenyl-2-oxazoline], 97%	150529-93-4
593597	(-)-2,2'-Isopropylidenebis[(4S)-4-phenyl-2-oxazoline], 97%	131457-46-0
396000	(+)-2,2'-Methylenebis[(3aR,8aS)-3a,8adihydro-8H-indeno[1,2-d]oxazole], 98%	180186-94-1
613192	(-)-2,2'-Methylenebis[(3aS,8aR)-3a,8adihydro-8H-indeno[1,2-d]oxazole], 98%	175166-49-1
1173177	(4S,4'S)-2,2'-(Pentane-3,3'-diyl)bis(4-benzyl-4,5-dihydrooxazole), 98%	160191-64-0
620226	(4S,4'S)-(-)-2,2'-(3-Pentylidene)bis(4-isopropyl-2-oxazoline), 97%	160191-65-1
1758234	(4S,4'S)-(-)-2,2'-(3-Pentylidene)bis(4-phenyl-2-oxazoline), 95%	190791-28-7
1729957	(R)-2-(4-Phenyl-4,5-dihydro-oxazol-2-yl)-pyridine, 95%	153880-57-0
1682828	(S)-2-(4-Phenyl-4,5-dihydro-oxazol-2-yl)-pyridine, 95%	117408-99-8

## ■ Phosphine Ligands

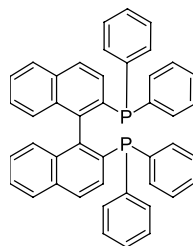
107328



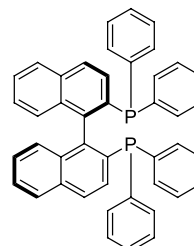
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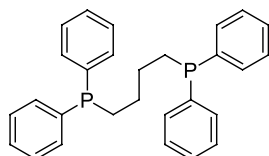
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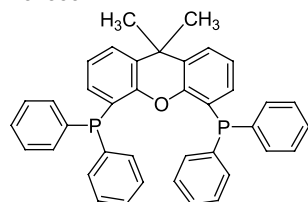
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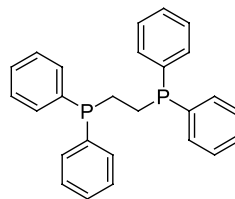
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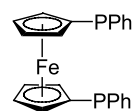
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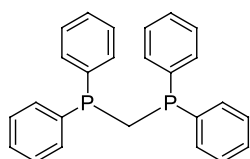
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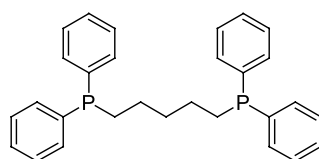
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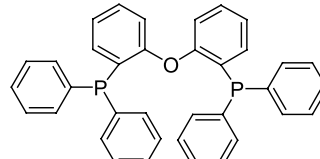
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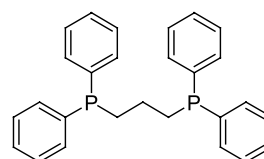
276165



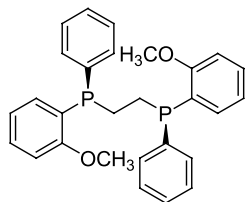
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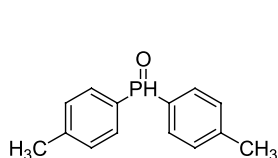
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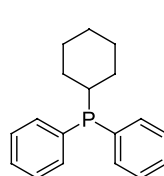
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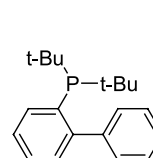
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223615



912127

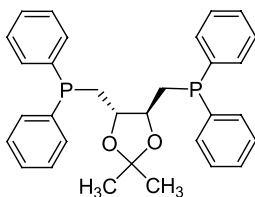


Cat. No.	Description	CAS
107328	1,1'-Bis(diisopropylphosphino)ferrocene, 98%	97239-80-0
351296	Bis(3,5-dimethylphenyl)phosphine oxide, DPEphos, 97%	187344-92-9
252679	2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl, (±)-BINAP, 98%	98327-87-8
903287	(R)-(+)-2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl, (R)-(+)-BINAP, 98%	76189-55-4
145240	1,4-Bis(diphenylphosphino)butane, DPPB, 98%	7688-25-7
134853	4,5-Bis(diphenylphosphino)-9,9-dimethylxanthene, 98%	161265-03-8
190390	1,2-Bis(diphenylphosphino)ethane, DPPE, 98%	1663-45-2
231095	1,1'-Bis(diphenylphosphino)ferrocene, 98%	12150-46-8
273066	Bis(diphenylphosphino)methane, DPM, 97%	2071-20-7
276165	1,5-Bis(diphenylphosphino)pentane, 98%	27721-02-4
931550	Bis(2-diphenylphosphinophenyl)ether, DPEphos, 98%	166330-10-5
161283	1,3-Bis(diphenylphosphino)propane, DPPP, 98%	6737-42-4
360136	(1R,2R)-Bis[(2-methoxyphenyl)phenylphosphino]ethane, (R,R)-DiPAMP, 95%	55739-58-7
554210	Bis(p-methylphenyl)phosphine oxide, 97%	2409-61-2
223615	Cyclohexyldiphenylphosphine, 98%	6372-42-5
912127	2-(Di-tert-butylphosphino)biphenyl, 99%	224311-51-7

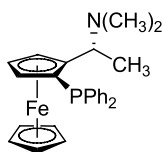


## Ligands

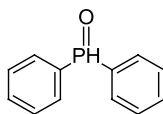
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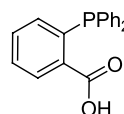
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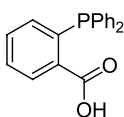
132045



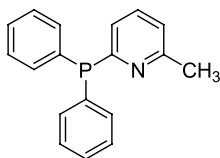
902789



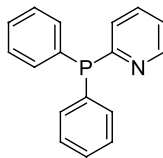
162023



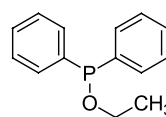
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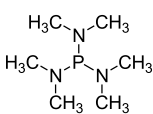
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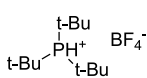
197468



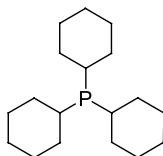
117368



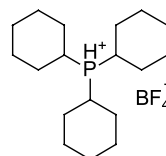
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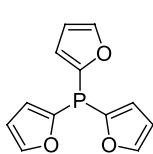
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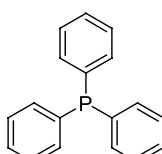
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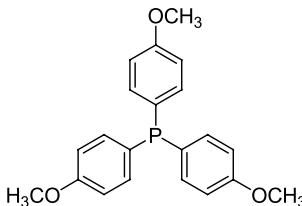
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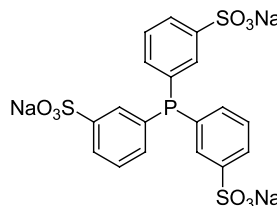
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265496

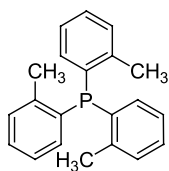


281696

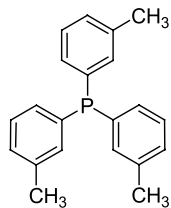


Cat. No.	Description	CAS
482868	(4S,5S)-(+)-2,2-Dimethyl-4,5-bis((diphenylphosphino)methyl)-1,3-dioxolane, (S,S)-DIOP, 98%	37002-48-5
594153	(R)-N,N-Dimethyl-1-[(S)-2-(diphenylphosphino)ferrocenyl]ethylamine, 96%	55700-44-2
132045	Diphenylphosphine oxide, HPOPh <sub>2</sub> , 97%	4559-70-0
902789	2-(Diphenylphosphino)benzoic acid, 97%	17261-28-8
162023	2-(Diphenylphosphino)benzoic acid, 98%	17261-28-8
262881	2-Diphenylphosphino-6-methylpyridine, 98%	132682-77-0
200513	Diphenyl-2-pyridylphosphine, 97%	37943-90-1
197468	Ethyl diphenylphosphinite, 97%	719-80-2
117368	Hexamethylphosphorous triamide	1608-26-0
471531	Tri-tert-butylphosphonium tetrafluoroborate, 98%	131274-22-1
128983	Tricyclohexylphosphine, 97%	2622-14-2
419063	Tricyclohexylphosphonium tetrafluoroborate, 98%	58656-04-5
455180	Tri(2-furyl)phosphine, TFP, 98%	5518-52-5
110246	Triphenylphosphine, PPh <sub>3</sub> , 99%	603-35-0
265496	Tris(4-methoxyphenyl)phosphine, 95%	855-38-9
281696	Tris(3-sulfonatophenyl)phosphine sodium salt hydrate, 95%	63995-70-0

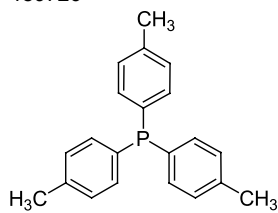
102357



170663



189726



Cat. No.	Description	CAS
102357	Tri-o-tolylphosphine, 97%	6163-58-2
170663	Tri-m-tolylphosphine, 98%	6224-63-1
189726	Tri-p-tolylphosphine, 98%	1038-95-5

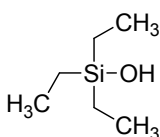
# Organosilicon

Due to the mild reaction condition and easily removing byproducts, organosilicon have become essential partners in the cross-coupling reaction.

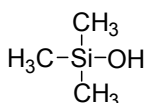
J&K offers a number of organosilicon include silanols, silazanes, trialkoxysilanes, siloxanes for laboratory researchers and large scale manufacturers.

## ■ Silanols

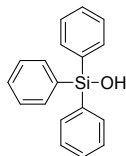
418046



909636



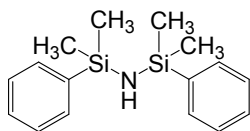
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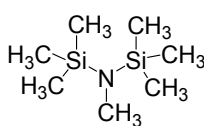
Cat. No.	Description	CAS
418046	Triethylsilanol, 97%	597-52-4
909636	Trimethylsilanol, 95%	1066-40-6
198572	Triphenylsilanol, 98%	791-31-1

## ■ Silazanes

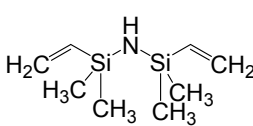
245053



543142



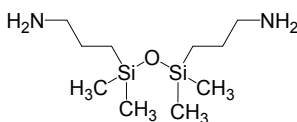
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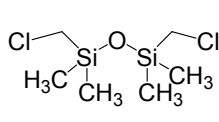
Cat. No.	Description	CAS
245053	1,3-Diphenyl-1,1,3,3-tetramethyldisilazane, 95%	3449-26-1
543142	Heptamethyldisilazane, 98%	920-68-3
107401	1,1,3,3-Tetramethyl-1,3-divinyldisilazane, 96%	7691-02-3

## ■ Siloxanes

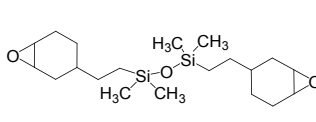
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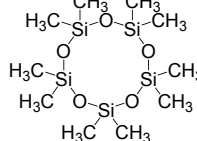
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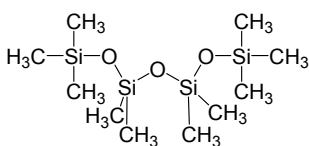
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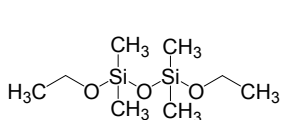
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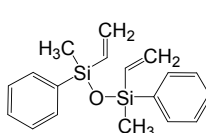
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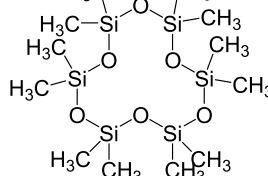
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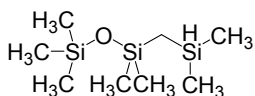
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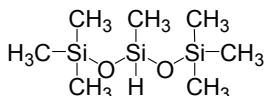
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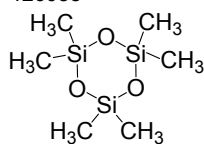
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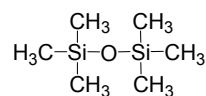
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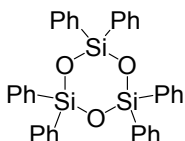
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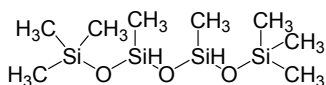
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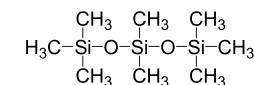
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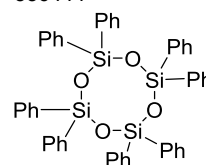
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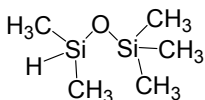
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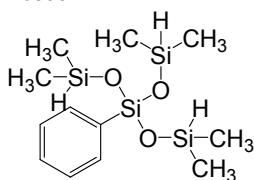
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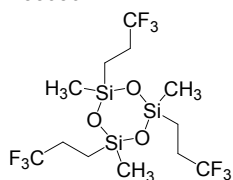
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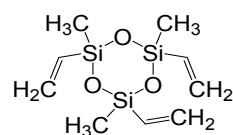
468951



153036



476983

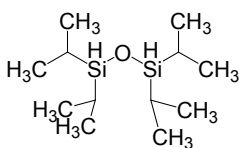


Cat. No.	Description	CAS
444054	1,3-Bis(3-aminopropyl)tetramethyldisiloxane, 97%	2469-55-8
983651	1,3-Bis(chloromethyl)tetramethyldisiloxane, 99%	2362-10-9
204971	1,3-Bis[2-(3,4-epoxycyclohex-1-yl)ethyl]tetramethyldisiloxane, 90%	18724-32-8
302106	Decamethylcyclopentasiloxane, 97%	541-02-6
134638	Decamethyltetrasiloxane, 97%	141-62-8
179237	1,3-Diethoxy-1,1,3,3-tetramethyldisiloxane, 97%	18420-09-2
460268	1,3-Divinyl-1,3-diphenyl-1,3-dimethyldisiloxane, 97%	2627-97-6
460568	Dodecamethylcyclohexasiloxane, 98%	540-97-6
175227	1,1,1,3,3,5,5-Heptamethyltrisiloxane, 90%	2895-07-0
551453	1,1,1,3,5,5,5-Heptamethyltrisiloxane, 98%	1873-88-7
126088	Hexamethylcyclotrisiloxane, 95%	541-05-9
283740	Hexamethyldisiloxane, 99%	107-46-0
198004	Hexaphenylcyclotrisiloxane, 98%	512-63-0
430300	1,1,1,3,5,7,7-Octamethyltetrasiloxane, 99%	16066-09-4
276367	Octamethyltrisiloxane, 98%	107-51-7
536444	Octaphenylcyclotetrasiloxane, 98%	546-56-5
508249	Pentamethyldisiloxane, 95%	1438-82-0
468951	Phenyl tris(dimethylsiloxy)silane, 96%	18027-45-7
153036	1,3,5-Trimethyl-1,3,5-tris(3,3,3-trifluoropropyl)cyclotrisiloxane, 99.5%	2374-14-3
476983	2,4,6-Trimethyl-2,4,6-trivinylcyclotrisiloxane, 97%	3901-77-7

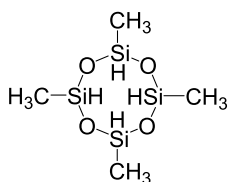
# Organosilicon

## Trialkoxysilanes

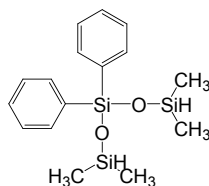
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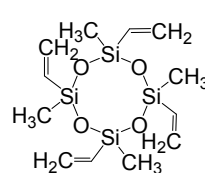
984609



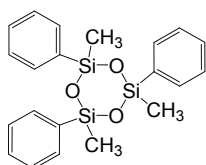
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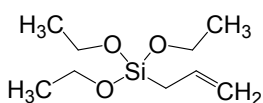
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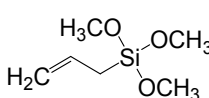
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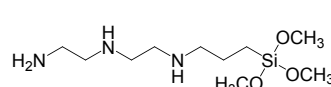
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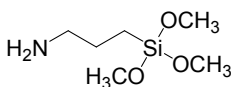
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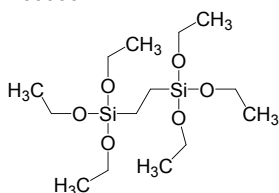
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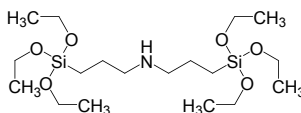
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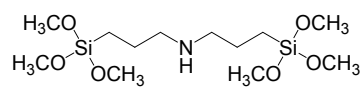
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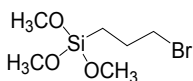
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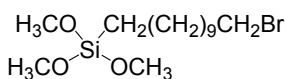
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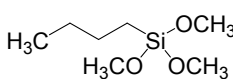
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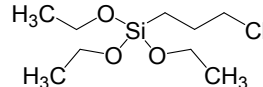
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529913

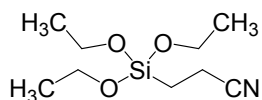


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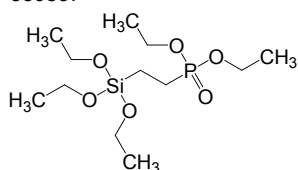


Cat. No.	Description	CAS
176596	1,1,3,3-Tetraisopropylidisiloxane, 95%	18043-71-5
984609	1,3,5,7-Tetramethylcyclotetrasiloxane, 99%	2370-88-9
1018776	1,1,5,5-Tetramethyl-3,3-diphenyltrisiloxane, 98%	17875-55-7
552391	2,4,6,8-Tetramethyl-2,4,6,8-tetravinylcyclotetrasiloxane, 97%	2554-06-5
548830	2,4,6-Trimethyl-2,4,6-triphenylcyclotrisiloxane, 95%	546-45-2
132284	Allyltriethoxysilane, 97%	2550-04-1
128220	Allyltrimethoxysilane, 97%	2551-83-9
548502	3-[2-(2-Aminoethylamino)ethylamino]propyl-trimethoxysilane, 95%	35141-30-1
566905	3-Aminopropyltrimethoxysilane, 97%	13822-56-5
483935	1,2-Bis(trimethoxysilyl)ethane, 95%	16068-37-4
139194	Bis[3-(triethoxysilyl)propyl]amine, 95%	13497-18-2
423018	Bis(trimethoxysilylpropyl)amine, 95%	82985-35-1
483200	3-Bromopropyltrimethoxysilane, 97%	51826-90-5
967186	11-Bromoundecyltrimethoxysilane, 90%	17947-99-8
529913	n-Butyltrimethoxysilane, 97%	1067-57-8
256661	3-Chloropropyltriethoxysilane, 97%	5089-70-3

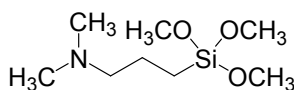
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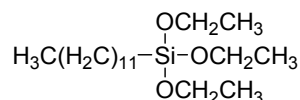
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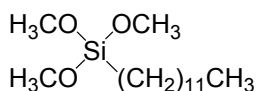
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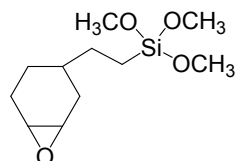
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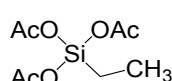
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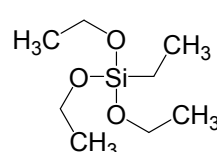
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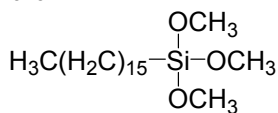
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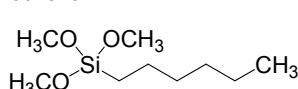
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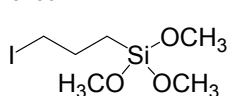
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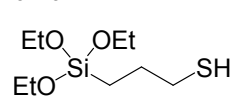
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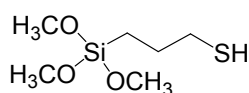
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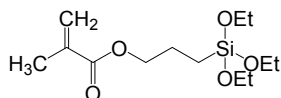
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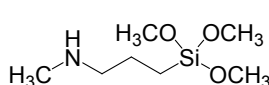
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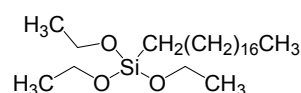
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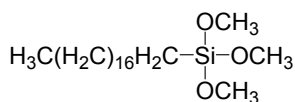
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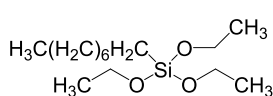
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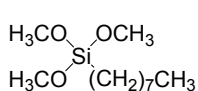
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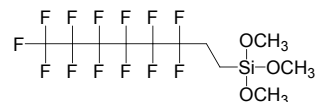
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124581



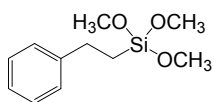
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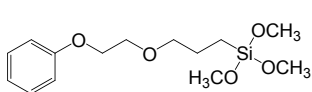
Cat. No.	Description	CAS
241922	2-Cyanoethyltriethoxysilane, 97%	919-31-3
330837	Diethylphosphatoethyltriethoxysilane, 92%	757-44-8
157952	(N,N-Dimethyl-3-aminopropyl)trimethoxysilane, 95%	2530-86-1
518097	Dodecyltriethoxysilane, 95%	18536-91-9
310033	n-Dodecyltrimethoxysilane, 95%	3069-21-4
401714	2-(3,4-Epoxycyclohexyl)ethyltrimethoxysilane, 97%	3388-04-3
253144	Ethyltriacetoxysilane, 97%	17689-77-9
384054	Ethyltriethoxysilane, 97%	78-07-9
313127	Hexadecyltrimethoxysilane, 95%	16415-12-6
601843	n-Hexyltrimethoxysilane, 97%	3069-19-0
310017	3-Iodopropyltrimethoxysilane, 95%	14867-28-8
517512	3-Mercaptopropyltriethoxysilane, 95%	14814-09-6
180573	3-Mercaptopropyltrimethoxysilane, 97%	4420-74-0
969251	Methacryloxypropyltriethoxysilane, 97%	21142-29-0
308331	(3-Methylaminopropyl)trimethoxysilane, 95%	3069-25-8
199404	n-Octadecyltriethoxysilane, 85%	7399-00-0
495138	Octadecyltrimethoxysilane, 90%	3069-42-9
339028	n-Octyltriethoxysilane, 97%	2943-75-1
124581	n-Octyltrimethoxysilane, 97%	3069-40-7
414715	1H,1H,2H,2H-Perfluorooctyltrimethoxysilane, 96%	85857-16-5

## Organosilicon

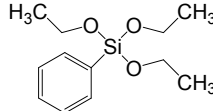
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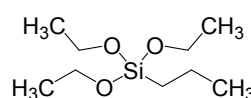
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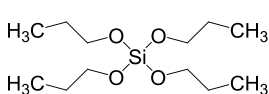
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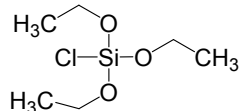
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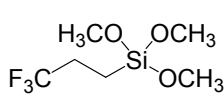
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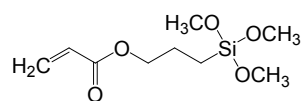
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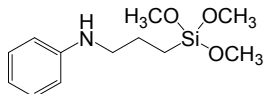
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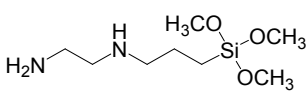
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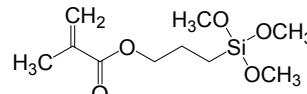
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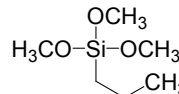
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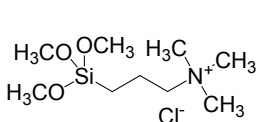
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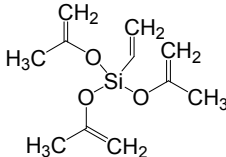
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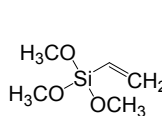
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370484



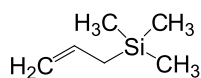
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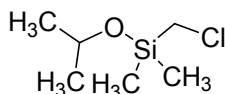
Cat. No.	Description	CAS
305771	Phenethyltrimethoxysilane, 97.5%	49539-88-0
1588734	(3-(2-Phenoxyethoxy)propyl) trimethoxysilane, 95%	N/A
565628	Phenyltriethoxysilane, 98%	780-69-8
553778	n-Propyltriethoxysilane, 97%	2550-02-9
191440	Tetra-n-propoxysilane, 98%	682-01-9
417243	Triethoxychlorosilane, 95%	4667-99-6
312035	3,3,3-Trifluoropropyl-trimethoxysilane, 97%	429-60-7
432972	3-(Trimethoxysilyl)propyl acrylate, 95%, stabilized with MEHQ	4369-14-6
568285	N-[3-(Trimethoxysilyl)propyl]aniline, 96%	3068-76-6
137935	N-[3-(Trimethoxysilyl)propyl]ethylenediamine, 95%	1760-24-3
175528	3-(Trimethoxysilyl)propyl methacrylate, 98%	2530-85-0
392279	Trimethoxy(propyl)silane, 98%, J&KSeal	1067-25-0
292574	N-Trimethoxysilylpropyl-N,N,N-trimethylammonium chloride, 50% in methanol	35141-36-7
370484	Vinyltrisopropenoxysilane, 95%	15332-99-7
187403	Vinyltrimethoxysilane, 97.5%	2768-02-7

## ■ Others

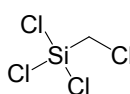
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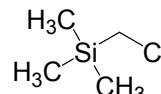
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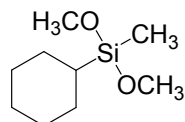
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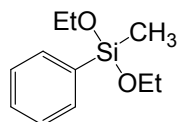
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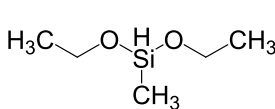
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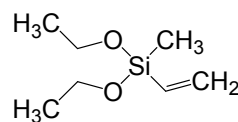
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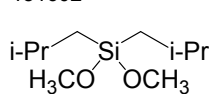
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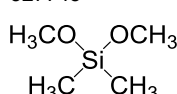
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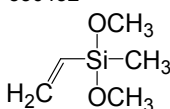
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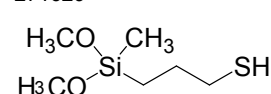
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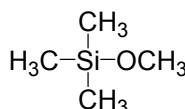
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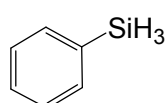
271629



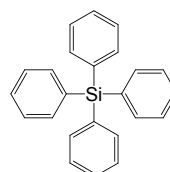
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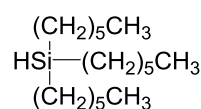
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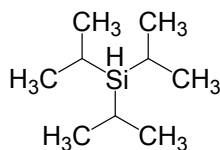
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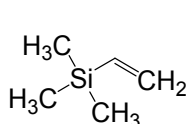
258861



973821



163342



Cat. No.	Description	CAS
531623	Allyltrimethylsilane, 98%	762-72-1
467398	Chloromethyldimethylisopropoxysilane, 97%	18171-11-4
127640	(Chloromethyl)trichlorosilane, 98%	1558-25-4
152486	(Chloromethyl)trimethylsilane, 98%	2344-80-1
536352	Cyclohexyl(dimethoxy)methylsilane, 99%	17865-32-6
549177	Diethoxy(methyl)phenylsilane, 98%	775-56-4
152568	Diethoxymethylsilane, 98%	2031-62-1
197976	Diethoxymethylvinylsilane, 97%	5507-44-8
151602	Diisobutyldimethoxysilane, 97%	17980-32-4
327745	Dimethoxydimethylsilane, 97%	1112-39-6
530432	Dimethoxymethylvinylsilane, 97%	16753-62-1
271629	(3-Mercaptopropyl)methyl dimethoxy silane, 96%	31001-77-1
363682	Methoxytrimethylsilane, 97%	1825-61-2
223088	Phenylsilane, 97.5%	694-53-1
393659	Tetraphenylsilane, 97%	1048-08-4
258861	Tri-n-hexylsilane, 95%	2929-52-4
973821	Triisopropylsilane, 97.5%	6485-79-6
163342	Trimethyl(vinyl)silane, 97%	754-05-2



# Oxidizing and Reducing Agents

J&K offers an extensive range of oxidizing and reducing agents in different package sizes from grams to kilograms. All these products are recognized for their excellent quality and competitive prices.

- Oxidizing Agents
  - Chromates

Cat. No.	Description	CAS
436105	Ammonium dichromate, 99%	7789-09-5
323281	Bis(tetrabutylammonium) dichromate, 99%	56660-19-6
365281	Chromium(VI) oxide, 99.5%	1333-82-0
120579	Pyridinium chlorochromate, 98%	26299-14-9
478363	Pyridinium dichromate, 97.5%	20039-37-6
349170	Potassium dichromate, 99%, ACS reagent	7778-50-9

- Hypervalent Iodine Compounds

Cat. No.	Description	CAS
422219	Bis(pyridine)iodonium tetrafluoroborate, 97%	15656-28-7
516004	[Bis(trifluoroacetoxy)iodo]benzene, 98%	2712-78-9
585143	Dess-Martin periodinane, 15 wt.% solution in CH <sub>2</sub> Cl <sub>2</sub> , J&KSeal	87413-09-0
915830	Dess-Martin periodinane, 98%	87413-09-0
403687	Diphenyliodonium chloride, 98%	1483-72-3
517519	Diphenyliodonium nitrate, 97%	722-56-5
595536	[Hydroxy(tosyloxy)iodo]benzene, 98%	27126-76-7
138123	Iodobenzene diacetate, 98%	3240-34-4
376541	2-Iodosobenzoic acid, 95%	304-91-6
201085	2-Iodoxybenzoic acid, stabilized	61717-82-6

- Organic Peroxides

Cat. No.	Description	CAS
452201	Acetoxyacetone, 97%	592-20-1
1239260	tert-Amyl hydroperoxide, 85%	3425-61-4
934368	Benzoyl peroxide, 98%	94-36-0
235959	tert-Butyl cumyl peroxide, 94%	3457-61-2
228590	tert-Butyl hydroperoxide, 70% in H <sub>2</sub> O	75-91-2
306519	3-Chloroperoxybenzoic acid, 75%	937-14-4
298118	Cumene hydroperoxide, 80%	80-15-9
314979	Di-tert-butyl peroxide, 98%	110-05-4
301002	Lauroyl peroxide, 97%	105-74-8

- Perchlorates

Cat. No.	Description	CAS
527025	Aluminum perchlorate nonahydrate, 99%	81029-06-3
506576	Calcium hypochlorite, tech., 65% available chlorine	7778-54-3

## Oxidizing and Reducing Agents

Cat. No.	Description	CAS
423096	Perchloric acid, 70% solution in H <sub>2</sub> O, ACS reagent	7601-90-3
438232	Tetrabutylammonium perchlorate, 98%	1923-70-2

- Sulfides

Cat. No.	Description	CAS
977625	Ammonium persulfate, 98%, for electrophoresis	7727-54-0
252154	Potassium peroxodisulfate, 99%, for analysis	7727-21-1
229941	Potassium peroxomonosulfate, 4.5% active oxygen	37222-66-5
341366	Sodium persulfate, 98%	7775-27-1
266601	Sulfur trioxide pyridine complex, 98%, tech., active SO <sub>3</sub> ca. 48 - 50%	26412-87-3

- Others

Cat. No.	Description	CAS
1752680	9-Azabicyclo[3.3.1]nonan-3-one N-oxyl, 95%	7123-92-4
1711622	9-Azabicyclo[3.3.1]nonane N-oxyl radical, 95%	73324-62-6
272873	N-Bromosuccinimide, 99%	128-08-5
549750	(1R)-(-)-(10-Camphorsulfonyl)oxaziridine, 95%	104372-31-8
553755	(1S)-(+)-(10-Camphorsulfonyl)oxaziridine, 98%	104322-63-6
270418	N-Chlorobenzenesulfonamide sodium salt, 98%	127-52-6
480967	2,3-Dichloro-5,6-dicyano-1,4-benzoquinone, 98%	84-58-2
245234	Dichloroisocyanuric acid sodium salt, 97.5%	2893-78-9
275643	N-Iodosuccinimide, 99%	516-12-1
119989	2,6-Lutidine N-oxide, 98%	1073-23-0
971604	Methyl chlorooxoacetate, 97%	5781-53-3
166478	4-Methylmorpholine N-oxide monohydrate, 97%	70187-32-5
958156	4-Methylmorpholine N-oxide, 97%	7529-22-8
552092	Nitrosonium tetrafluoroborate, 96%	14635-75-7
110139	Octyl acetate, 99%	112-14-1
323780	Phosphomolybdic acid hydrate, 20 wt% solution in ethanol	51429-74-4
380072	Sodium dichloroisocyanurate dihydrate, 98%	51580-86-0
286332	Sodium hypochlorite, 5% available chlorine	7681-52-9
935710	Sodium hypochlorite, 13% available chlorine	7681-52-9
100922	Sodium percarbonate	15630-89-4
174331	Sodium p-toluenesulfonchloramide trihydrate, 97%	7080-50-4
370201	Tetracyanoethylene, 98%	670-54-2
235286	2,2,6,6-Tetramethylpiperidine 1-oxyl free radical, 98%	2564-83-2
580449	Tetrapropylammonium perruthenate, 97%	114615-82-6

# Oxidizing and Reducing Agents

## ■ Reducing Agents

### • Boranes

Cat. No.	Description	CAS
512634	9-Borabicyclo[3.3.1]nonane, 0.5 M solution in THF, J&KSeal	280-64-8
171874	9-Borabicyclo[3.3.1]nonane dimer	21205-91-4
521013	Borane tert-butylamine complex, 97%	7337-45-3
223656	Borane-N,N-diethylaniline complex, 96%	13289-97-9
964720	Borane dimethyl sulfide complex, 10 M in DMS	13292-87-0
266741	Borane dimethyl sulfide complex, 2.0 M solution in THF, J&KSeal	13292-87-0
611975	Borane morpholine complex, 97%	4856-95-5
622063	Borane-2-picoline complex, 95%	3999-38-0
121499	Borane pyridine complex, 95%	110-51-0
280157	Borane-tetrahydrofuran complex, 1.0 M solution in THF, stabilized, J&KSeal	14044-65-6
613203	Borane-trimethylamine complex, 97.5%	75-22-9
317236	Borane triphenylphosphine complex, 97%	2049-55-0
610284	Catecholborane, 1.0 M solution in THF, J&KSeal	274-07-7
593715	(-)-B-Chlorodiisopinocampheylborane, 60 wt.% solution in heptane, ca. 1.7 M, J&KSeal	85116-37-6
608345	Diethylmethoxyborane, 10% in THF	7397-46-8
240264	Diethyl(3-pyridyl)borane, 97%	89878-14-8
509184	(+)-Diisopinocampheylchloroborane, 1.8 M solution in hexanes, J&KSeal	112246-73-8
107724	(S)-(-)-2-Methyl-CBS-oxazaborolidine, 1.0 M solution in THF	112022-81-8
550459	Tri-sec-butylborane, 1.0 M solution in THF, J&KSeal	1113-78-6
581133	Triethylamine borane, 97%, J&KSeal	1722-26-5
106089	Trimethylboroxine, 3.5 M solution in THF	823-96-1

### • Borohydrides

Cat. No.	Description	CAS
501827	Bis(triphenylphosphine)copper tetrahydroborate, 95%	16903-61-0
957972	Lithium borohydride, 2.0 M solution in THF, J&KSeal	16949-15-8
327321	Potassium hydrotris(3,5-dimethylpyrazol-1-yl)borate, 99%	17567-17-8
314162	Sodium cyanoborohydride, 95%	25895-60-7
296463	Sodium triacetoxymethylborohydride, 97%	56553-60-7
120921	Tetrabutylammonium borohydride, 97.5%	33725-74-5
509663	Tetramethylammonium triacetoxymethylborohydride, 95%	109704-53-2

### • Metal Hydrides

Cat. No.	Description	CAS
217526	Bis(cyclopentadienyl)zirconium(IV) dihydride, 98%	37342-98-6
119248	Calcium hydride, 93%	7789-78-8
997665	Diisobutylaluminum hydride, 1.0 M solution in hexanes, J&KSeal	1191-15-7
943828	Lithium aluminum hydride, 1.0 M solution in THF, J&KSeal	16853-85-3

## Oxidizing and Reducing Agents

Cat. No.	Description	CAS
219855	Lithium aluminium hydride, 2.4 M solution in THF, J&KSeal	16853-85-3
383792	Lithium aluminum hydride, 95%	16853-85-3
385868	Lithium hydride, 98%	7580-67-8
432348	Lithium tri-tert-butoxyaluminumhydride, 1.1 M solution in THF, J&KSeal	17476-04-9
979659	Lithium tri-tert-butoxyaluminum hydride, 98%	17476-04-9
114895	Sodium hydride, 60% dispersion in mineral oil	7646-69-7
419668	Tri-n-butyltin hydride, 97%, stabilized with 0.05% BHT	688-73-3
383048	Zirconium(II) hydride, 99%	7704-99-6
107076	Zirconocene chloride hydride, 94%	37342-97-5

- Silanes

Cat. No.	Description	CAS
293144	Chlorodiisopropylsilane, 95%	2227-29-4
152568	Diethoxymethylsilane, 98%	2031-62-1
956018	Diphenylsilane, 99%	775-12-2
223088	Phenylsilane, 97.5%	694-53-1
432209	1,1,3,3-Tetramethyldisiloxane, 97%	3277-26-7
906066	Triethylsilane, 99%	617-86-7
258861	Tri-n-hexylsilane, 95%	2929-52-4
973821	Triisopropylsilane, 97.5%	6485-79-6
197987	Tris(trimethylsilyl)silane, 97%	1873-77-4

- Others

Cat. No.	Description	CAS
505196	Diethyl 1,4-dihydro-2,6-dimethyl-3,5-pyridinedicarboxylate, 98%	1149-23-1
415951	Dithiothreitol, 99%, for electrophoresis	3483-12-3
117829	Hydrazine dihydrochloride, 98.5%	5341-61-7
281232	Hydrazine hydrate, 64% hydrazine	10217-52-4
275896	Hydrazine monohydrochloride, 98%	2644-70-4
789438	N-Isopropylidene-N'-2-nitrobenzenesulfonyl hydrazine, 98%	6655-27-2
110246	Triphenylphosphine, 99%	603-35-0
312334	Tris(2-carboxyethyl)phosphine hydrochloride, 98%	51805-45-9
485224	Sodium, 99.5%, oiled sticks	7440-23-5

# Protecting Reagents

J&K provides a wide range of protecting agents with reliable quality and high performance.

Cat. No.	Description	CAS
279787	Allyl bromide, 98%	106-95-6
488389	Allyl chloride, 98%, stabilized	107-05-1
410620	Allyl chloroformate, 98%	2937-50-0
995305	N-(Allyloxycarbonyloxy)succinimide, 95%	135544-68-2
531623	Allyltrimethylsilane, 98%	762-72-1
151258	p-Anisaldehyde dimethyl acetal, 98%	2186-92-7
199896	p-Anisaldehyde, 99%	123-11-5
375478	1,2-Benzenedisulfonyl dichloride, 98%	6461-76-3
954055	Benzoyl chloride, 98%, ACS reagent	98-88-4
520318	Benzyl bromide, 97%	100-39-0
171375	Benzyl carbazate, 98%	5331-43-1
994323	Benzyl chloride, 99%, stabilized with 0.25% Propylene oxide	100-44-7
283749	Benzyl chloroformate, 97%, J&KSeal	501-53-1
626605	Benzyl phenyl carbonate, 95%	28170-07-2
503610	Benzyl 2,2,2-trichloroacetimidate, 99%	81927-55-1
227784	N-(Benzyloxycarbonyloxy)succinimide, 99%	13139-17-8
529084	1,2-Bis(dimethylamino)dimethylsilyl]ethane, 95%	91166-50-6
517392	Bis(trichloromethyl) carbonate, 99%	32315-10-9
447636	N,O-Bis(trimethylsilyl)acetamide, 95%	10416-59-8
559190	1,2-Bis(trimethylsilyloxy)ethane, 98%	7381-30-8
978377	N,O-Bis(trimethylsilyl)trifluoroacetamide, 98%, J&KSeal	25561-30-2
279334	1-Boc-1H-1,2,4-triazole, 97%	41864-24-8
208367	Bromotriphenylmethane, 98%	596-43-0
329150	2-Bromo-4'-methoxyacetophenone, 98%	2632-13-5
366373	2-Bromoacetophenone, 99%	70-11-1
260190	9-Bromo-9-phenylfluorene, 98%	55135-66-5
472228	Bromotrimethylsilane, 97%	2857-97-8
436875	2-tert-Butoxycarbonyloxymino-2-phenylacetonitrile, 99%	58632-95-4
242214	tert-Butyl carbazate, 99%	870-46-2
611681	tert-Butyl phenyl carbonate, 98%	6627-89-0
462967	tert-Butyl 2,2,2-trichloroacetimidate, 97%	98946-18-0
362315	tert-Butylchlorodiphenylsilane, 98%	58479-61-1
236144	tert-Butyldimethylchlorosilane, 99%	18162-48-6
490728	t-Butyldimethylsilane, 95%	29681-57-0
218454	tert-Butyldimethylsilyl trifluoromethanesulfonate, 98%	69739-34-0
296944	N-tert-Butyldimethylsilyl-N-methyltrifluoroacetamide, 97%	77377-52-7
467702	N-Carbethoxyphthalimide, 98%	22509-74-6
129173	Cesium fluoride, 99%	13400-13-0
103198	N-(2-Chlorobenzoyloxycarbonyloxy)succinimide, 98%	65853-65-8
596936	Chlorodimethylphenylsilane, 97%	768-33-2

Cat. No.	Description	CAS
140792	1-Chloroethyl chloroformate, 97%	50893-53-3
412200	2-Chloroethyl ethyl ether, 98%	628-34-2
294426	Chloromethyl ethyl ether, 80%	3188-13-4
152486	(Chloromethyl)trimethylsilane, 98%	2344-80-1
459545	Chlorotriethylsilane, 1.0 M solution in THF	994-30-9
212710	Chlorotriethylsilane, 99%	994-30-9
458784	Chlorotrimethylsilane, 99%, J&KSeal	75-77-4
371713	2-Chlorotriyl chloride, 98%	42074-68-0
137679	Dibenzosuberyl chloride, 97%	1210-33-9
476860	Dibenzyl dicarbonate, 95%	31139-36-3
252225	Di-tert-butyl dicarbonate, 99%	24424-99-5
409051	Di-tert-butylsilyl bis(trifluoromethanesulfonate), 97%	85272-31-7
216817	1,3-Dichloro-1,1,3,3-tetraisopropylidisiloxane, 97%	69304-37-6
356442	1,3-Dichloro-1,1,3,3-tetramethylidisiloxane, 97%	2401-73-2
152771	Dichlorodimethylsilane, 99%	75-78-5
241987	Dichlorodiphenylsilane, 96%	80-10-4
477992	Dichloromethylphenylsilane, 98%, J&KSeal	149-74-6
176388	Diethyl carbonate, 99%, anhydrous	105-58-8
391472	3,4-Dihydro-2H-pyran, 98%	110-87-2
157348	2,4-Dimethoxybenzaldehyde, 98%	613-45-6
101363	2,2-Dimethoxypropane, 98%	77-76-9
284114	4,4'-Dimethoxytriphenylmethyl chloride, 98%	40615-36-9
325632	Diphenylphosphinic chloride, 98%	1499-21-4
296962	Ethyl vinyl ether, 99%	109-92-2
114634	Ethylene glycol, 99%, extra pure	107-21-1
243179	N-(9-Fluorenylmethoxycarbonyloxy)succinimide, 98%	82911-69-1
277506	9-Fluorenylmethyl carbamate, 98%	84418-43-9
197308	9-Fluorenylmethyl chloroformate, 98%	28920-43-6
376227	Fluosilicic acid, 25 wt.% solution in H <sub>2</sub> O	16961-83-4
969218	Iodotrimethylsilane, 1.0 M solution in methylene chloride	16029-98-4
930720	Iodotrimethylsilane, 98%, stabilized with copper, J&KSeal	16029-98-4
391175	Isopropyl dimethylchlorosilane, 97%, derivatization grade	3634-56-8
155748	4-Methoxybenzenesulfonyl chloride, 99%	98-68-0
400128	4-Methoxybenzyl chloride, 98%, stabilized with potassium carbonate	824-94-2
796578	4-Methoxycarbonylphenylchloroformate, 98%	31140-40-6
402753	2-Methoxyethoxymethyl chloride, 94%	3970-21-6
186547	N-(Methoxymethyl)-N-(trimethylsilylmethyl)benzylamine, 96%	93102-05-7
413550	2-Methoxypropene, 97%, stabilized	116-11-0
228224	4-Methoxytrityl chloride, 98%	14470-28-1
291645	4-Methylthio phenol, 98%	1073-72-9
225993	Methyltrichlorosilane, 98%	75-79-6
123746	N-Methyl-N-(trimethylsilyl)trifluoroacetamide, 97%	24589-78-4

# Protecting Reagents

Cat. No.	Description	CAS
119020	2-Nitrobenzenesulfonyl chloride, 95%	7669-54-7
356957	2-Nitrobenzenesulfonyl chloride, 97%	1694-92-4
603426	4-Nitrobenzyl bromide, 99%	100-11-8
278823	4-Nitrophenyl chloroformate, 98%	7693-46-1
906637	Phthalic anhydride, 99%	85-44-9
284575	1,3-Propanedithiol, 98%	109-80-8
932144	Propylene glycol, 99.8%	57-55-6
251141	Tetrabutylammonium fluoride trihydrate, 99%	87749-50-6
995821	Tetrabutylammonium fluoride, 1.0 M solution in THF, containing ca. 5% H <sub>2</sub> O, J&KSeal	429-41-4
915029	Tetrabutylammonium fluoride, 75 wt.% solution in H <sub>2</sub> O	429-41-4
326129	Tetraethylammonium fluoride hydrate, 98%	98330-04-2
499800	Tetramethylammonium fluoride tetrahydrate, 98%	17787-40-5
349772	p-Toluenesulfonic anhydride, 95%	4124-41-8
283322	p-Toluenesulfonyl chloride, 99%	98-59-9
230087	2,2,2-Trichloroethyl chloroformate, 99%	17341-93-4
953647	Trichloro(octyl)silane, 98%	5283-66-9
226781	Triethyloxonium tetrafluoroborate, 1.0 M solution in CH <sub>2</sub> Cl <sub>2</sub> , J&KSeal	368-39-8
357577	Triethylsilyl trifluoromethanesulfonate, 99%	79271-56-0
370486	1-(Trifluoroacetyl)imidazole, 97.5%, derivatization grade	1546-79-8
298993	Trifluoromethanesulfonyl chloride, 98%	421-83-0
219760	Triisopropylchlorosilane, 97%	13154-24-0
189913	Triisopropylsilyl trifluoromethanesulfonate, 97%	80522-42-5
193079	Trimethyl orthoformate, 99%	149-73-5
318458	2,4,6-Trimethylbenzenesulfonyl chloride, 99%	773-64-8
264281	Trimethylsilyl trifluoromethanesulfonate, 99%	27607-77-8
533891	(Trimethylsilyl)diazomethane, 2.0 M solution in hexanes	18107-18-1
914009	(Trimethylsilyl)diazomethane, 2.0 M solution in hexanes, J&KSeal	18107-18-1
124824	2-(Trimethylsilyl)ethanol, 99%	2916-68-9
178729	2-(Trimethylsilyl)ethoxymethyl chloride, 95%, stabilized with 10 ppm N,N-diisopropylethylamine	76513-69-4
600909	N-Trimethylsilylimidazole, 98%	18156-74-6
217693	Triphenylchlorosilane, 96%	76-86-8

J&K SuperDry Solvents are specifically manufactured for moisture sensitive reactions in organometallic, nucleotide and other types of chemical synthesis, with water content ranges from 10 ppm to 50 ppm, to meet laboratory and industrial requirements.

J&K's products have:

- Extremely low water content
- J&KSeal packaging
- Competitive prices

■ Products with Molecular Sieves

Cat. No.	Description	CAS
939631	Acetonitrile, 99.9%, SuperDry, with molecular sieves, J&KSeal	75-05-8
924447	Chlorobenzene, 99.8%, SuperDry, with molecular sieves, J&KSeal	108-90-7
942369	N,N-Dimethylacetamide, 99.8%, SuperDry, with molecular sieves, stabilized with 250 ppm BHT, J&KSeal	127-19-5
983353	N,N-Dimethylformamide, 99.8%, SuperDry, with molecular sieves, J&KSeal	68-12-2
292271	Dimethyl sulfoxide, 99.7%, SuperDry, with molecular sieves, J&KSeal	67-68-5
922424	Ethanol, 99.5%, SuperDry, with molecular sieves, J&KSeal	64-17-5
920352	Ethyl acetate, 99.9%, SuperDry, with molecular sieves, J&KSeal	141-78-6
965017	n-Heptane, 99%, SuperDry, with molecular sieves, water≤10 ppm, J&KSeal	142-82-5
994903	n-Hexane, 97.5%, SuperDry, with molecular sieves, J&KSeal	110-54-3
919270	Isopropanol, 99.5%, SuperDry, with molecular sieves, J&KSeal	67-63-0
957329	Methanol, 99.9%, SuperDry, with molecular sieves, water≤30 ppm, J&KSeal	67-56-1
944736	Methylcyclohexane, 99%, SuperDry, with molecular sieves, J&KSeal	108-87-2
299669	Pyridine, 99.5%, SuperDry, with molecular sieves, J&KSeal	110-86-1
974643	Tetrahydrofuran, 99.5%, SuperDry, with molecular sieves, stabilized with 250 ppm BHT, J&KSeal	109-99-9

■ Products without Molecular Sieves

Cat. No.	Description	CAS
980779	Acetonitrile, 99.9%, SuperDry, water≤10 ppm, J&KSeal	75-05-8
909376	Acetonitrile, 99.9%, SuperDry, water≤30 ppm, J&KSeal	75-05-8
934589	Anisole, 99.7%, SuperDry, water≤20 ppm, J&KSeal	100-66-3
940353	Benzene, 99.7%, SuperDry, water≤20 ppm, J&KSeal	71-43-2
995573	Benzonitrile, 99%, SuperDry, water≤30 ppm, J&KSeal	100-47-0
350291	Benzotrifluoride, 99%, SuperDry, water≤10 ppm, J&KSeal	98-08-8
941061	Benzyl alcohol, 99%, SuperDry, water≤30 ppm, J&KSeal	100-51-6
940976	1,3-Butanediol, 99%, SuperDry, water≤30 ppm, J&KSeal	107-88-0
968231	1-Butanol, 99.5%, SuperDry, J&KSeal	71-36-3
480434	2-Butanol, 99.5%, SuperDry, J&KSeal	78-92-2
974855	tert-Butanol, 99.5%, SuperDry, J&KSeal	75-65-0
910906	Butyl acetate, 99%, SuperDry, J&KSeal	123-86-4
578165	Dibutyl ether, 99%, SuperDry, J&KSeal	142-96-1
907428	Chlorobenzene, 99.8%, SuperDry, J&KSeal	108-90-7



# SuperDry Solvents

Cat. No.	Description	CAS
992220	1-Chlorobutane, 99.5%, SuperDry, water≤20 ppm, J&KSeal	109-69-3
951908	Cyclohexane, 99.5%, SuperDry, J&KSeal	110-82-7
924745	Cyclopentane, 98%, SuperDry, J&KSeal	287-92-3
459276	Cyclopentyl methyl ether, 99.9%, SuperDry, stabilized with BHT, J&KSeal	5614-37-9
935260	Decahydronaphthalene, 99%, SuperDry, mixture of cis and trans, water≤20 ppm, J&KSeal	91-17-8
965574	n-Decane, 99%, SuperDry, J&KSeal	124-18-5
957164	1,2-Dichlorobenzene, 99%, SuperDry, J&KSeal	95-50-1
362591	Diethylene glycol dimethyl ether, 99.5%, SuperDry, J&KSeal	111-96-6
926644	Diisopropyl ether, 99%, SuperDry, stabilized with BHT, water≤20 ppm, J&KSeal	108-20-3
961681	1,2-Dimethoxyethane, 99.5%, SuperDry, water≤30 ppm, J&KSeal	110-71-4
974443	Dimethyl carbonate, 99.5%, SuperDry, water≤20 ppm, J&KSeal	616-38-6
935690	Dimethyl sulfoxide, 99.9%, SuperDry, J&KSeal	67-68-5
951007	N,N-Dimethylacetamide, 99.8%, SuperDry, J&KSeal	127-19-5
966438	N,N-Dimethylformamide, 99.8%, SuperDry, J&KSeal	68-12-2
923338	1,3-Dioxolane, 99.8%, SuperDry, stabilized with BHT, water≤30 ppm, J&KSeal	646-06-0
937525	n-Dodecane, 99%, SuperDry, water≤30 ppm, J&KSeal	112-40-3
954068	Ethanol, 99.5%, SuperDry, J&KSeal	64-17-5
954403	Ethyl acetate, 99.5%, SuperDry, J&KSeal	141-78-6
995707	Ethylbenzene, 99%, SuperDry, water≤20 ppm, J&KSeal	100-41-4
916984	Ethylene glycol, 99.5%, SuperDry, J&KSeal	107-21-1
945268	n-Heptane, 99%, SuperDry, water≤10 ppm, J&KSeal	142-82-5
901049	n-Hexadecane, 99%, SuperDry, water≤30 ppm, J&KSeal	544-76-3
947770	n-Hexane, 97.5%, SuperDry, J&KSeal	110-54-3
928830	n-Hexanol, 99%, SuperDry, J&KSeal	111-27-3
952012	Isoamyl acetate, 99%, SuperDry, J&KSeal	123-92-2
971509	Isopropanol, 99.5%, SuperDry, J&KSeal	67-63-0
980290	Methanol, 99.9%, SuperDry, water≤30 ppm, J&KSeal	67-56-1
985928	2-Methoxyethanol, 99%, SuperDry, J&KSeal	109-86-4
976314	Methyl acetate, 99%, SuperDry, water≤30 ppm, J&KSeal	79-20-9
987699	Methyl formate, 99%, SuperDry, J&KSeal	107-31-3
930480	3-Methyl-1-butanol, 99%, SuperDry, water≤30 ppm, J&KSeal	123-51-3
325261	Methylcyclohexane, 99%, SuperDry, water≤20 ppm, J&KSeal	108-87-2
986861	2-Methyl-1-propanol, 99.5%, SuperDry, water≤30 ppm, J&KSeal	78-83-1
917493	1-Methyl-2-pyrrolidinone, 99.5%, SuperDry, J&KSeal	872-50-4
284814	2-Methyltetrahydrofuran, 99%, SuperDry, water≤20 ppm, J&KSeal	96-47-9
906033	n-Nonane, 99%, SuperDry, J&KSeal	111-84-2
131867	n-Octane, 99%, SuperDry, J&KSeal	111-65-9
947900	1-Octanol, 99%, SuperDry, water≤30 ppm, J&KSeal	111-87-5
981965	n-Pentane, 99%, SuperDry, water≤10 ppm, J&KSeal	109-66-0
955181	1-Propanol, 99.7%, SuperDry, J&KSeal	71-23-8
979269	Propylene carbonate, 99.5%, SuperDry, J&KSeal	108-32-7
944908	Pyridine, 99.5%, SuperDry, water≤30 ppm, J&KSeal	110-86-1

## SuperDry Solvents

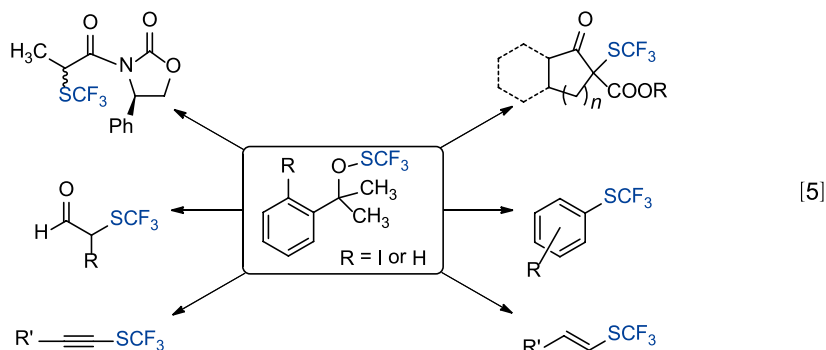
Cat. No.	Description	CAS
315353	Tetrahydrofuran, 99.9%, SuperDry, stabilized with 250 ppm BHT, J&KSeal	109-99-9
902032	Tetrahydrofuran, 99.9%, SuperDry, stabilizer free, J&KSeal	109-99-9
978766	1,2,3,4-Tetrahydronaphthalene, 99%, SuperDry, J&KSeal	119-64-2
956883	1,2,4-Trichlorobenzene, 99%, SuperDry, water $\leq$ 20 ppm, J&KSeal	120-82-1
942610	Triethyl orthoformate, 98%, SuperDry, water $\leq$ 30 ppm, J&KSeal	122-51-0
952334	2,2,4-Trimethylpentane, 99.8%, SuperDry, water $\leq$ 30 ppm, J&KSeal	540-84-1
961859	o-Xylene, 99%, SuperDry, water $\leq$ 30 ppm, J&KSeal	95-47-6
932383	m-Xylene, 99%, SuperDry, water $\leq$ 20 ppm, J&KSeal	108-38-3
972646	Xylenes, 99%, SuperDry, mixture of isomers, J&KSeal	1330-20-7

# Trifluoromethylthiolating Reagents

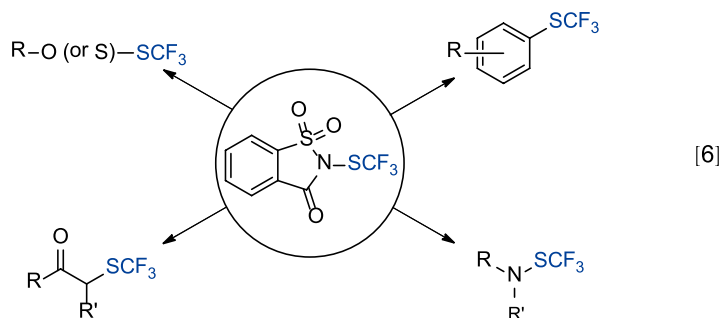
The trifluoromethylthio group ( $\text{CF}_3\text{S}-$ ) represents one of the most lipophilic substituents. It is well known that incorporation of the trifluoromethylthio group into small molecules greatly enhances their ability to cross lipid membranes and their absorption rate *in vivo*<sup>[1]</sup>. In addition, the high electronegativity of the  $\text{CF}_3\text{S}$  group significantly improves the small molecule's stability in acidic environments. Thus, the trifluoromethylthio group has drawn special attention from the pharmaceutical and agrochemical industries for its use in isostere-based drug design<sup>[2,3]</sup>.

J&K offers trifluoromethylthiolating reagents developed by Qilong Shen's group at Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences. There are two types of these new electrophilic reagents: Trifluoromethanesulfenates (Lu-Shen reagent) and N-trifluoromethylthiosaccharin (Shen reagent). Systematic studies have shown that both types of reagents are highly reactive toward a wide range of nucleophiles, yet the substrate scope of these reagents is complementary<sup>[4]</sup>.

## ■ Trifluoromethanesulfenates (Lu-Shen Reagent)



## ■ N-Trifluoromethylthiosaccharin (Shen Reagent)

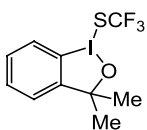


## References

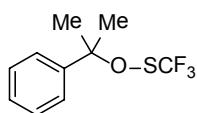
- [1] Shao, X.-X.; Xu, C.-F.; Lu, L.; Shen, Q. *Acc. Chem. Res.* **2015**, *48*, 1227.
- [2] Shao, X.-X.; Wang, X.-Q.; Yang, T.; Lu, L.; Shen, Q. *Angew. Chem. Int. Ed.* **2013**, *52*, 3457.
- [3] Wang, X.-Q.; Yang, T.; Cheng, X.-L.; Shen, Q. *Angew. Chem. Int. Ed.* **2013**, *52*, 12860.
- [4] Hu, F.; Shao, X.-X.; Zu, D.-H.; Lu, L.; Shen, Q. *Angew. Chem. Int. Ed.* **2014**, *53*, 6105.
- [5] Shao, X.-X.; Xu, C.-F.; Lu, L.; Shen, Q. *J. Org. Chem.* **2015**, *80*, 3012.
- [6] Xu, C.-F.; Ma, B.-Q.; Shen, Q. *Angew. Chem. Int. Ed.* **2014**, *53*, 9316.

## Trifluoromethylthiolating Reagents

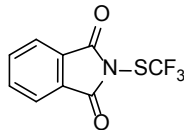
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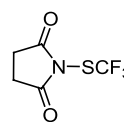
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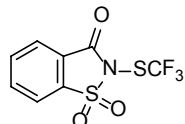
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1784565



1784567

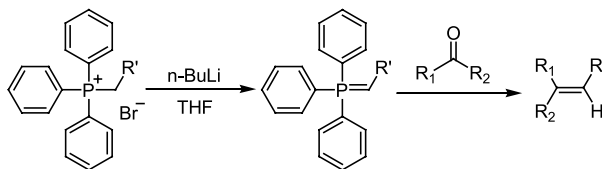


Cat. No.	Description	CAS
1784571	3,3-Dimethyl-1-(Trifluoromethylthio)-1,2-benziodoxole, 95%	1584705-82-7
1784574	(2-Phenylpropan-2-yloxy)(trifluoromethyl)sulfane, 98%	1640084-14-5
1784566	2-(Trifluoromethylthio)isoindoline-1,3-dione, 98%	719-98-2
1784565	1-(Trifluoromethylthio)pyrrolidine-2,5-dione, 98%	183267-04-1
1784567	N-Trifluoromethylthiosaccharin, 98%	1647073-46-8

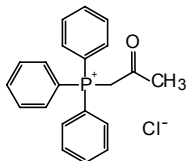
# Wittig Reagents

The Wittig reaction was discovered by Georg Wittig in 1954 and he was awarded the Nobel Prize in Chemistry in 1979. This reaction is known as one of the most widely used methods for the formation of carbon-carbon double-bonds. Numerous alkenes can be conveniently obtained through reactions of certain aldehydes or ketones with Wittig reagents (triphenyl phosphonium ylides).

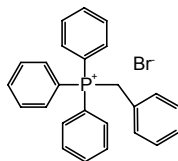
J&K provides a host of reagents related to Wittig reaction to satisfy customer needs.



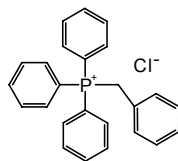
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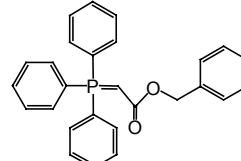
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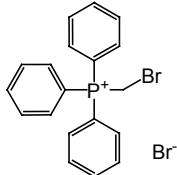
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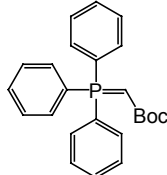
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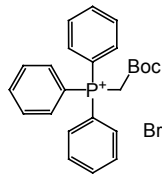
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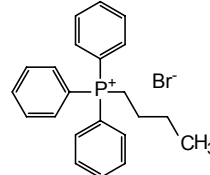
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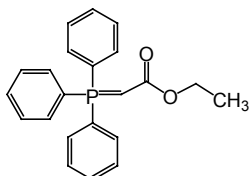
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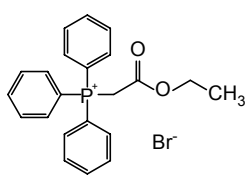
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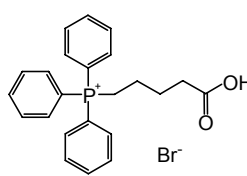
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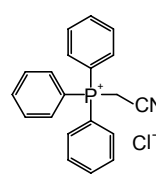
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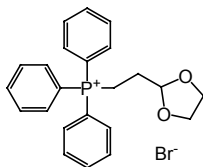


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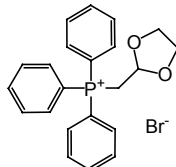


Cat. No.	Description	CAS
510017	Acetyltriphenylphosphonium chloride, 98%	1235-21-8
385166	Benzyltriphenylphosphonium bromide, 98%	1449-46-3
428147	Benzyltriphenylphosphonium chloride, 99%	1100-88-5
469634	Benzyl(triphenylphosphoranylidene) acetate, 97%	15097-38-8
142098	(Bromomethyl)triphenylphosphonium bromide, 98%	1034-49-7
227880	(tert-Butoxycarbonylmethylene) triphenylphosphorane, 97%	35000-38-5
476659	(tert-Butoxycarbonylmethyl) triphenylphosphonium bromide, 98%	59159-39-6
308367	Butyltriphenylphosphonium bromide, 99%	1779-51-7
347745	(Carbomethoxymethylene) triphenylphosphorane, 98%	1099-45-2
196483	(Carbomethoxymethyl)triphenylphosphonium bromide, 98%	1530-45-6
500416	4-(Carboxybutyl)triphenylphosphonium bromide, 98%	17814-85-6
162211	(Cyanomethyl)triphenylphosphonium chloride, 98%	4336-70-3

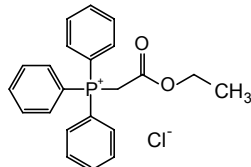
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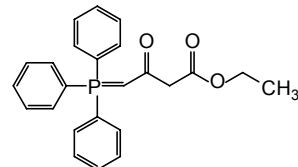
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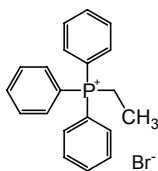
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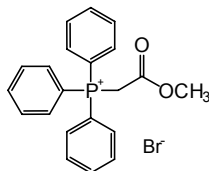
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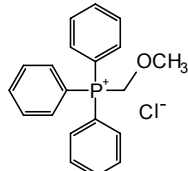
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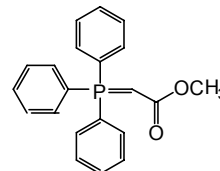
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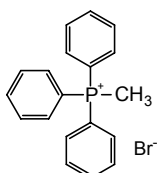
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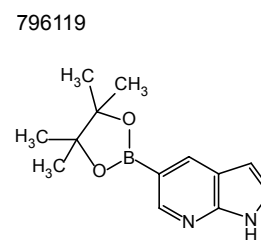
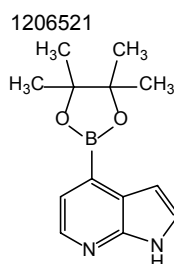
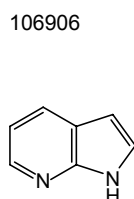
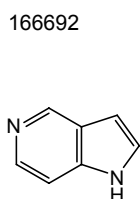
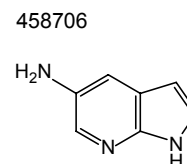
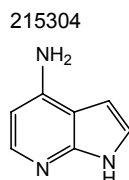
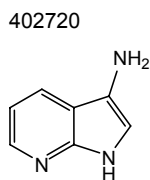
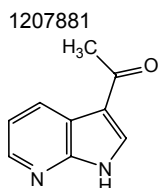
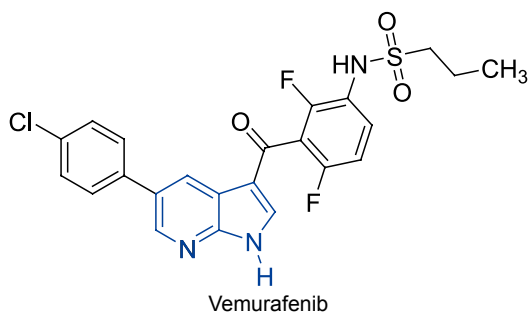
Cat. No.	Description	CAS
239929	2-(1,3-Dioxolan-2-yl)ethyltriphenylphosphonium bromide, 97%	86608-70-0
198774	(1,3-Dioxolan-2-ylmethyl) triphenylphosphonium bromide, 98%	52509-14-5
147038	(Ethoxycarbonylmethyl) triphenylphosphonium chloride, 96%	17577-28-5
100622	Ethyl 3-oxo-4-(triphenylphosphoranylidene)butyrate, 97%	13148-05-5
484842	Ethyltriphenylphosphonium bromide, 99%	1530-32-1
300113	(Methoxycarbonylmethyl) triphenylphosphonium bromide, 98%	1779-58-4
563719	(Methoxymethyl)triphenylphosphonium chloride, 97.5%	4009-98-7
292464	Methyl (triphenylphosphoranylidene) acetate, 98%	2605-67-6
248398	Methyltriphenylphosphonium bromide, 98%	1779-49-3

# Azaindoles

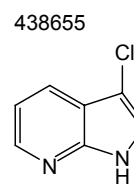
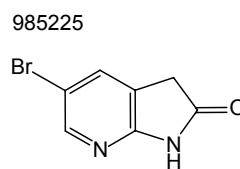
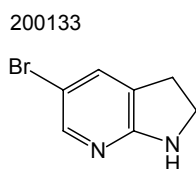
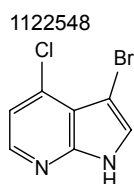
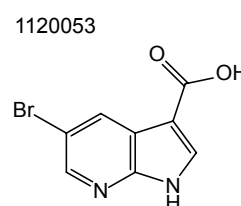
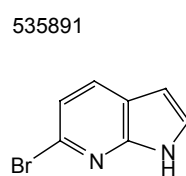
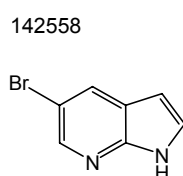
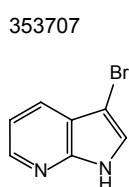
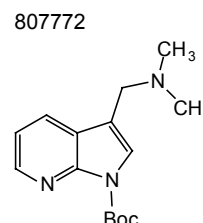
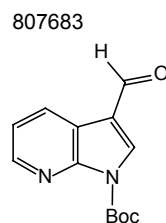
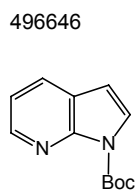
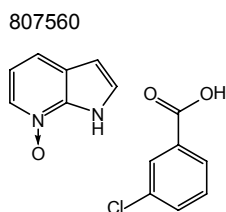
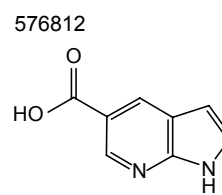
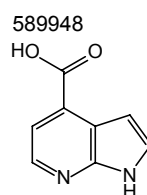
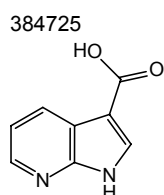
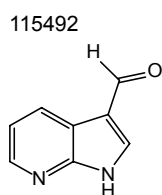
Azaindole is considered a bioisostere of indole. This is different from an indole only by an additional nitrogen atom in the ring which alters the distribution of electron density due to interaction of the "π-electron-deficient" and "π-electron-excessive" rings.

This structural feature of azaindoles broadens their applications in drug discovery and material sciences. Azaindole derivatives exhibit significant biological effects such as anti-angiogenic activities, anti-tumor activities and antibacterial activities. 7-Azaindoles are of particular interest because of their ability to mimic purines in their role as hydrogen-bonding partners. Medicinal chemists often utilize the azaindole core in their drug designs and synthesis.

J&K provides novel, unique and cost-effective azaindoles and derivatives, to help chemists realize their innovative ideas.



Cat. No.	Description	CAS
1207881	3-Acetyl-7-azaindole, 97%	83393-46-8
402720	3-Amino-7-azaindole, 95%	189882-31-3
215304	4-Amino-7-azaindole, 97%	74420-00-1
458706	5-Amino-7-azaindole, 97%	100960-07-4
166692	5-Azaindole, 98%	271-34-1
106906	7-Azaindole, 98%	271-63-6
1206521	7-Azaindole-4-boronic acid pinacol ester, 98%	942919-26-8
796119	7-Azaindole-5-boronic acid pinacol ester, 97%	754214-56-7

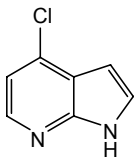


Cat. No.	Description	CAS
115492	7-Azaindole-3-carboxaldehyde, 97%	4649-09-6
384725	7-Azaindole-3-carboxylic acid, 97%	156270-06-3
589948	7-Azaindole-4-carboxylic acid, 98%	479553-01-0
576812	7-Azaindole-5-carboxylic acid, 98%	754214-42-1
807560	7-Azaindole N-oxide 3-chlorobenzoate, 95%	611197-49-0
496646	N-Boc-7-azaindole, 95%	138343-77-8
807683	N-Boc-7-azaindole-3-carboxaldehyde, 98%	144657-66-9
807772	N-Boc-3-[(dimethylamino)methyl]-7-azaindole, 97%	144657-65-8
353707	3-Bromo-7-azaindole, 97%	74420-15-8
142558	5-Bromo-7-azaindole, 97%	183208-35-7
535891	6-Bromo-7-azaindole, 97%	143468-13-7
1120053	5-Bromo-7-azaindole-3-carboxylic acid, 98%	849068-61-7
1122548	3-Bromo-4-chloro-7-azaindole, 98%	1000340-39-5
200133	5-Bromo-2,3-dihydro-7-azaindole, 97%	115170-40-6
985225	5-Bromo-2,3-dihydro-7-azaindole-2-one, 97%	183208-34-6
438655	3-Chloro-7-azaindole, 97%	80235-01-4

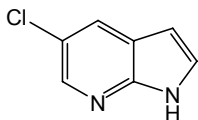


## Azaindoles

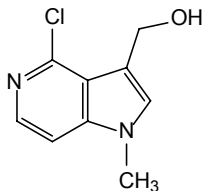
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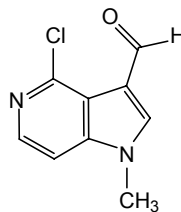
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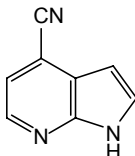
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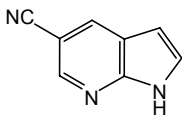
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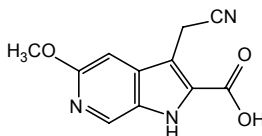
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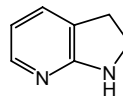
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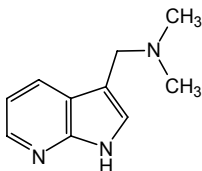
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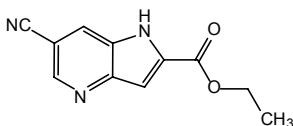
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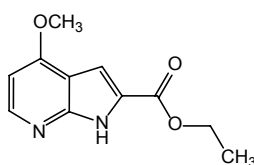
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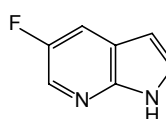
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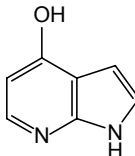
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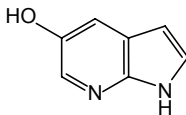
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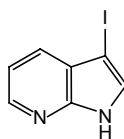
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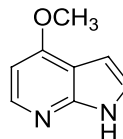
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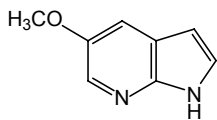


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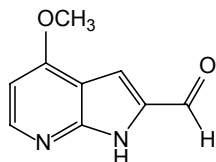


Cat. No.	Description	CAS
443752	4-Chloro-7-azaindole, 97%	55052-28-3
924724	5-Chloro-7-azaindole, 95%	866546-07-8
102199	(4-Chloro-1-methyl-5-azaindole-3-yl) methanol, 97%	97989-54-3
102198	4-Chloro-1-methyl-5-azaindole-3-carbaldehyde, 97%	97989-41-8
210688	4-Cyano-7-azaindole, 97%	344327-11-3
322729	5-Cyano-7-azaindole, 98%	517918-95-5
102190	3-(Cyanomethyl)-5-methoxy-6-azaindole-2-carboxylic acid, 96%	22772-37-8
447553	2,3-Dihydro-7-azaindole, 97%	10592-27-5
807685	3-(Dimethylaminomethyl)-7-azaindole, 97%	5654-92-2
102197	Ethyl 6-cyano-4-azaindole-2-carboxylate, 95%	152589-06-5
567568	Ethyl 4-methoxy-7-azaindole-2-carboxylate, 99%	290332-97-7
136629	5-Fluoro-7-azaindole, 97%	866319-00-8
115095	4-Hydroxy-7-azaindole, 98%	74420-02-3
601917	5-Hydroxy-7-azaindole, 98%	98549-88-3
476210	3-Iodo-7-azaindole, 95%	23616-57-1
587903	4-Methoxy-7-azaindole, 98%	122379-63-9

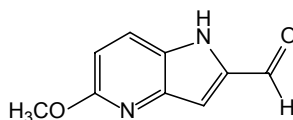
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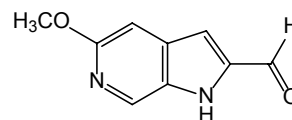
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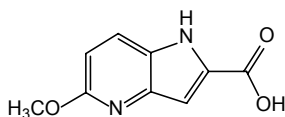
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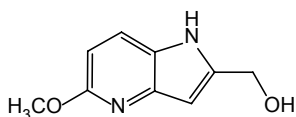
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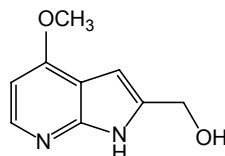
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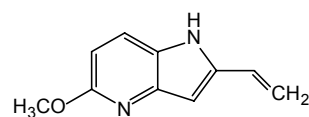
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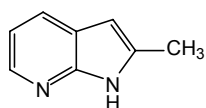
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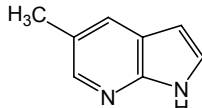
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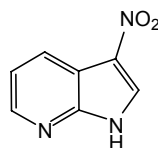
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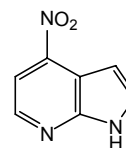
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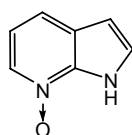
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890159



807684

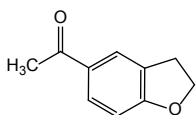


Cat. No.	Description	CAS
464857	5-Methoxy-7-azaindole, 98%	183208-36-8
136130	4-Methoxy-7-azaindole-2-carbaldehyde, 97%	290333-01-6
102201	5-Methoxy-4-azaindole-2-carbaldehyde, 97%	17288-50-5
102193	5-Methoxy-6-azaindole-2-carbaldehyde, 97%	17288-48-1
102194	5-Methoxy-4-azaindole-2-carboxylic acid, 97%	17288-33-4
102195	(5-Methoxy-4-azaindole-2-yl)methanol, 97%	17288-45-8
416772	(4-Methoxy-7-azaindole-2-yl)methanol, 99%	290332-99-9
102200	5-Methoxy-2-vinyl-4-azaindole, 97%	188999-31-7
971474	2-Methyl-7-azaindole, 99%	23612-48-8
332286	5-Methyl-7-azaindole, 97%	824-52-2
126938	3-Nitro-7-azaindole, 97%	23709-47-9
342943	4-Nitro-7-azaindole, 97%	83683-82-3
890159	4-Nitro-7-oxide-7-azaindole, 97%	74420-06-7
807684	7-Oxide-7-azaindole, 98%	55052-24-9

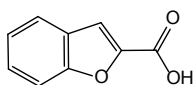
# Benzofurans

Benzofuran is a common structural unit that exists in numerous bioactive natural products, pharmaceuticals, molecular electronic and functional polymers.

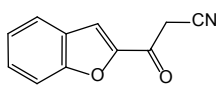
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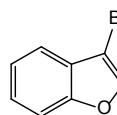
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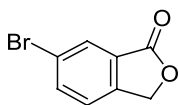
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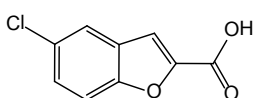
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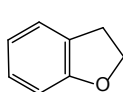
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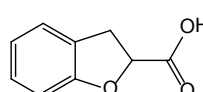
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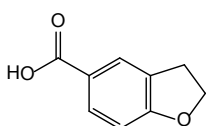
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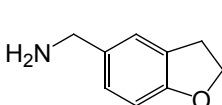
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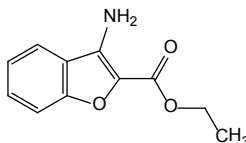
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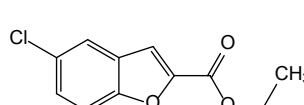
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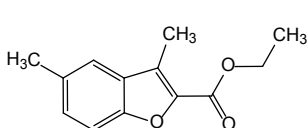
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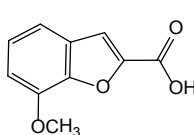
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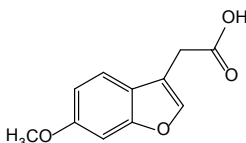
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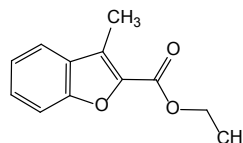
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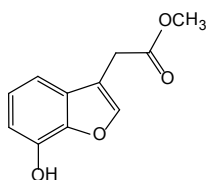
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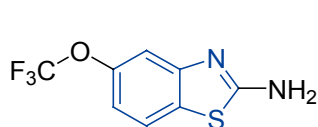


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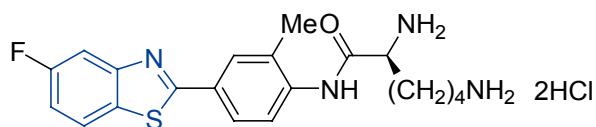


Cat. No.	Description	CAS
423082	5-Acetyl-2,3-dihydrobenzofuran, 97%	90843-31-5
248790	Benzofuran-2-carboxylic acid, 99%	496-41-3
151145	3-(Benzofuran-2-yl)-3-oxopropanenitrile, 97%	5149-69-9
113542	3-Bromo-1-benzofuran, 97%	59214-70-9
125439	6-Bromo-3H-isobenzofuran-1-one, 96%	19477-73-7
145865	5-Chlorobenzofuran-2-carboxylic acid, 97%	10242-10-1
324470	2,3-Dihydrobenzofuran, 99%	496-16-2
353853	2,3-Dihydro-1-benzofuran-2-carboxylic acid, 97%	1914-60-9
270829	2,3-Dihydro-1-benzofuran-5-carboxylic acid, 97%	76429-73-7
281369	2,3-Dihydrobenzofuran-5-ylmethylamine, 97%	55745-74-9
101696	Ethyl 3-aminobenzofuran-2-carboxylate, 97%	39786-35-1
287385	Ethyl 5-chlorobenzofuran-2-carboxylate, 97%	59962-89-9
795460	Ethyl 3,5-dimethylbenzofuran-2-carboxylate, 95%	16817-31-5
195210	7-Methoxybenzofuran-2-carboxylic acid, 97%	4790-79-8
140664	2-(6-Methoxy-1-benzofuran-3-yl)acetic acid, 97%	69716-05-8
299178	3-Methylbenzofuran-2-carboxylic acid ethyl ester, 97%	22367-82-4
140942	Methyl 2-(7-hydroxybenzofuran-3-yl)acetate, 97%	181052-63-1

Benzothiazoles have found many applications in medical research, agricultural and materials sciences. For example, Riluzole, marketed by Sanofi-Aventis, is a benzothiazole based drug that is used to treat amyotrophic lateral sclerosis (ALS). And NSC710305 exhibits selective and potent anti-cancer activity towards human breast and ovarian tumor xeno-grafts implanted in nude mice.

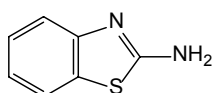


Riluzole

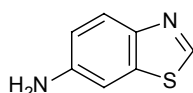


NSC710305

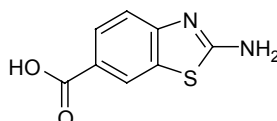
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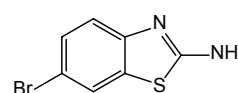
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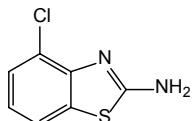
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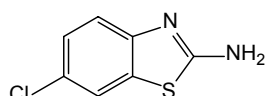
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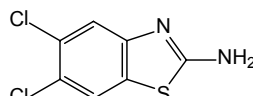
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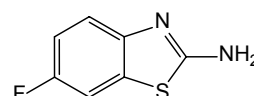
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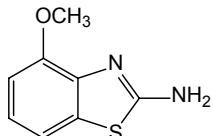
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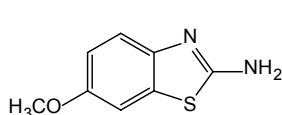
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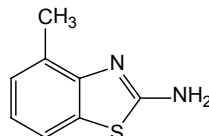
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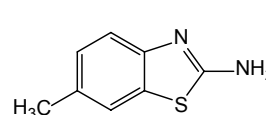
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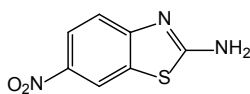
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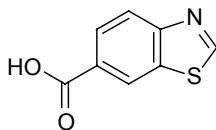
Cat. No.	Description	CAS
184983	2-Aminobenzothiazole, 99%	136-95-8
266860	6-Aminobenzothiazole, 97.5%	533-30-2
603470	2-Amino-benzothiazole-6-carboxylic acid, 95%	93-85-6
987707	2-Amino-6-bromobenzothiazole, 97%	15864-32-1
934818	2-Amino-4-chlorobenzothiazole, 97%	19952-47-7
908250	2-Amino-6-chlorobenzothiazole, 99%	95-24-9
626084	2-Amino-5,6-dichlorobenzothiazole, 97%	24072-75-1
395828	2-Amino-6-fluorobenzothiazole, 99%	348-40-3
954799	2-Amino-4-methoxybenzothiazole, 97%	5464-79-9
945968	2-Amino-6-methoxybenzothiazole, 99%	1747-60-0
207415	2-Amino-4-methylbenzothiazole, 98%	1477-42-5
914702	2-Amino-6-methylbenzothiazole, 98%	2536-91-6

## Benzothiazoles

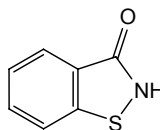
291536



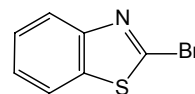
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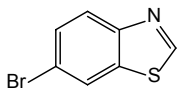
617808



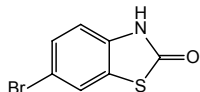
238611



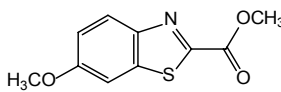
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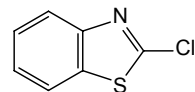
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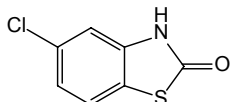
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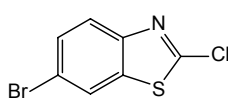
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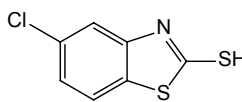
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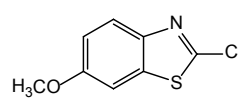
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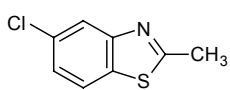
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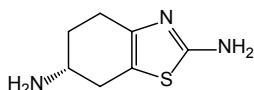
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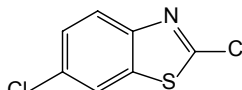
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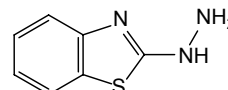
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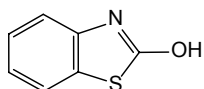
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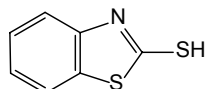
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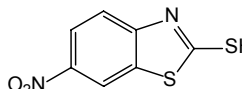
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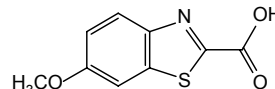
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511490



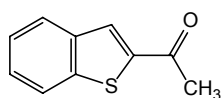
262860



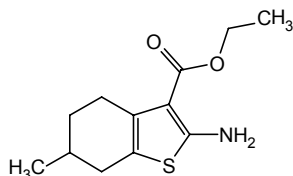
Cat. No.	Description	CAS
291536	2-Amino-6-nitrobenzothiazole, 98%	6285-57-0
258007	Benzothiazole-6-carboxylic acid, 97%	3622-35-3
617808	1,2-Benzisothiazol-3(2H)-one, 98%	2634-33-5
238611	2-Bromo-1,3-benzothiazole, 97%	2516-40-7
333817	6-Bromo-1,3-benzothiazole, 97%	53218-26-1
914322	6-Bromo-2-benzothiazolinone, 98%	62266-82-4
244171	2-Carbomethoxy-6-methoxy benzothiazole, 97%	884-22-0
527602	2-Chlorobenzothiazole, 99%	615-20-3
298197	5-Chloro-2(3H)-benzothiazolone, 98%	20600-44-6
148497	2-Chloro-6-bromobenzothiazole, 95%	80945-86-4
573808	5-Chloro-2-mercaptobenzothiazole, 98%	5331-91-9
461652	2-Chloro-6-methoxybenzothiazole, 97%	2605-14-3
169630	5-Chloro-2-methylbenzothiazole, 99%	1006-99-1
346090	(+)-(6R)-2,6-Diamino-4,5,6,7-tetrahydrobenzothiazole, 98%	106092-11-9
276542	2,6-Dichlorobenzothiazole, 97%	3622-23-9
610674	2-Hydrazinobenzothiazole, 95%	615-21-4
258152	2-Hydroxybenzothiazole, 98%	934-34-9
342699	2-Mercaptobenzothiazole, 99%	149-30-4
511490	2-Mercapto-6-nitrobenzothiazole, 96%	4845-58-3
262860	6-Methoxybenzothiazole-2-carboxylic acid, 97%	946-13-4

Benzothiophene and its derivatives possess a broad range of biological activities with pharmaceutical applications. Raloxifene and Zileuton are examples of drugs containing a benzothiophene moiety. Benzothiophenes are also used in the preparation of dyes like Thioindigo.

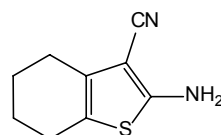
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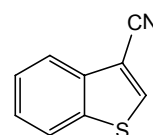
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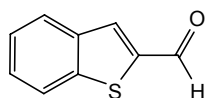
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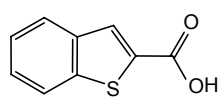
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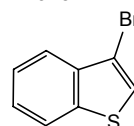
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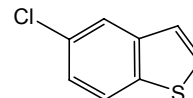
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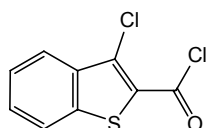
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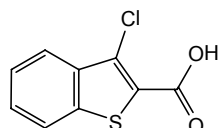
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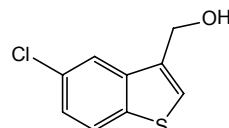
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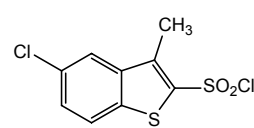
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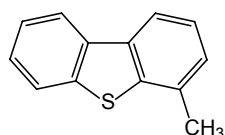
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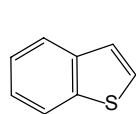
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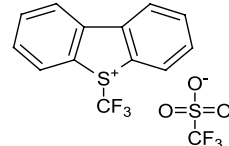
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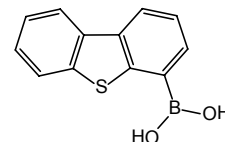
193382



169812



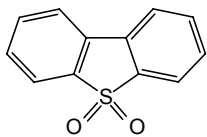
620822



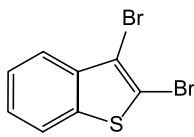
Cat. No.	Description	CAS
569421	2-Acetylbenzothiophene, 98%	22720-75-8
201553	2-Amino-6-methyl-4,5,6,7-tetrahydro-benzothiophene-3-carboxylic acid ethyl ester, 97%	76981-71-0
280179	2-Amino-4,5,6,7-tetrahydro-1-benzothiophene-3-carbonitrile, 97%	4651-91-6
788919	Benzothiophene-3-carbonitrile, 97%	24434-84-2
329997	Benzothiophene-2-carboxaldehyde, 97%	3541-37-5
250284	Benzothiophene-2-carboxylic acid, 98%	6314-28-9
129731	3-Bromo-1-benzothiophene, 97%	7342-82-7
227456	5-Chlorobenzothiophene, 98%	20532-33-6
223522	3-Chlorobenzothiophene-2-carbonyl chloride, 97%	21815-91-8
109995	3-Chlorobenzothiophene-2-carboxylic acid, 97%	21211-22-3
296477	(5-Chloro-1-benzothiophen-3-yl)methanol, 97%	306934-93-0
453375	5-Chloro-3-methylbenzo[b]thiophene-2-sulfonyl chloride, 98%	166964-33-6
444158	4-Methyldibenzothiophene, 97%	7372-88-5
193382	Thianaphthene, 98%	95-15-8
169812	5-(Trifluoromethyl)dibenzothiophenium trifluoromethanesulfonate, 97%	129946-88-9
620822	Dibenzothiophene-4-boronic acid, 98%	108847-20-7

## Benzothiophenes

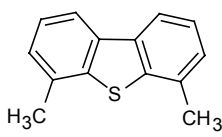
552078



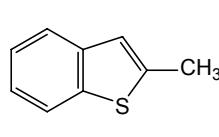
626742



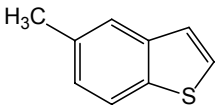
256041



576807



441830

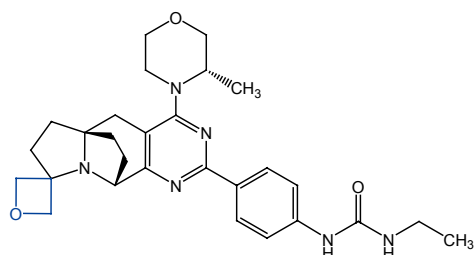


Cat. No.	Description	CAS
552078	Dibenzothiophene sulfone, 97%	1016-05-3
626742	2,3-Dibromobenzothiophene, 97%	6287-82-7
256041	4,6-Dimethyldibenzothiophene, 97%	1207-12-1
576807	2-Methylbenzo[b]thiophene, 99%	1195-14-8
441830	5-Methylbenzo[b]thiophene, 97%	14315-14-1

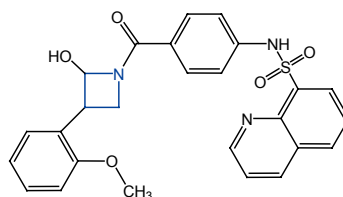
# Four-Membered Ring Compounds

Highly reactive four-membered ring compounds include cyclobutane, oxetane and azetidine. They are useful substrates in organic chemistry due to the functionalization of the different positions of the ring which can be used to design and preparation of biologically active compounds. For example, L-azetidine-2-carboxylic acid (237409) is an inhibitor of collagen synthesis as anti-angiogenic. The best-known examples of oxetane-containing drugs are the natural product paclitaxel (Taxol®) and its synthetic analog docetaxel. Joëlle Dubois and co-workers studied the effect of the deletion of the oxetane ring in analogs of docetaxel and found the analogs were less active than docetaxel in biological assays.

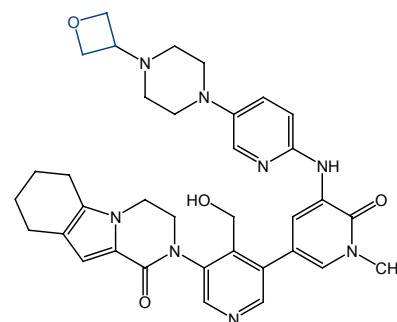
The four-membered ring compounds have become standard elements of the repertoire of chemists in drug discovery. This has resulted in an strong growth of the number of journals or patents across a wide range of applications.



mTOR Inhibitor  
Genentech  
J. Med. Chem., **2013**, 56(7), 3090-3101



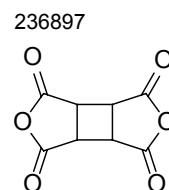
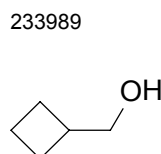
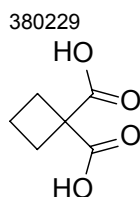
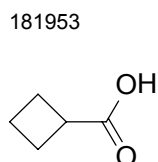
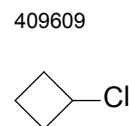
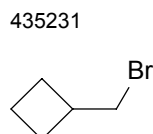
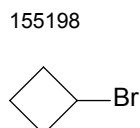
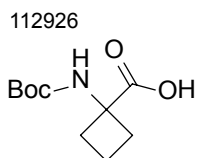
PKM2 modulators  
Agiros Pharm.  
WO **2014**/074848



BTK inhibitor  
Genentech, Inc.  
WO **2013**/067274

J&K can offer a variety of four-membered ring compounds in different package sizes from grams to kilograms. All these products have sufficient stock and are known for their excellent quality and competitive prices.

## ■ Cyclobutanes & Cyclobutenes

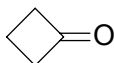


Cat. No.	Description	CAS
112926	Boc-1-amino-1-cyclobutane carboxylic acid, 97.5%	120728-10-1
155198	Bromocyclobutane, 97%	4399-47-7
435231	(Bromomethyl)cyclobutane, 98.5%	17247-58-4
409609	Chlorocyclobutane, 97%	1120-57-6
181953	Cyclobutanecarboxylic acid, 98%	3721-95-7
380229	1,1-Cyclobutanedicarboxylic acid, 99%	5445-51-2
233989	Cyclobutanemethanol, 98.5%	4415-82-1
236897	Cyclobutane-1,2,3,4-tetracarboxylic dianhydride, 98%	4415-87-6

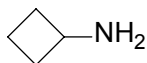


# Four-Membered Ring Compounds

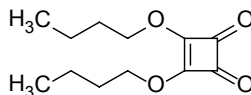
270250



144311



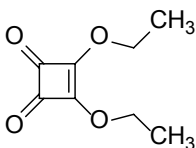
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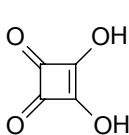
577369



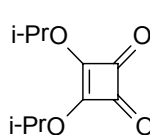
108051



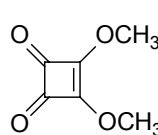
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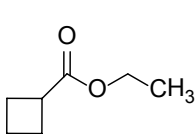
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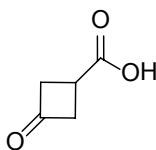
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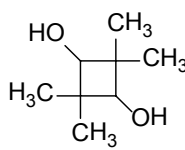
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168489



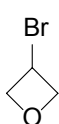
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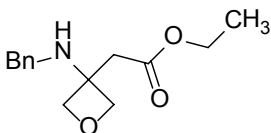
Cat. No.	Description	CAS
270250	Cyclobutanone, 98%	1191-95-3
144311	Cyclobutylamine, 98%	2516-34-9
491805	3,4-Dibutoxy-3-cyclobutene-1,2-dione, 98%	2892-62-8
577369	1,1-Dichlorosilacyclobutane, 97%	2351-33-9
108051	3,4-Diethoxy-3-cyclobutene-1,2-dione, 98%	5231-87-8
311369	3,4-Dihydroxy-3-cyclobutene-1,2-dione, 99%	2892-51-5
469816	3,4-Diisopropoxy-3-cyclobutene-1,2-dione, 98%	61699-62-5
184022	3,4-Dimethoxy-3-cyclobutene-1,2-dione, 99%	5222-73-1
595836	Ethyl cyclobutanecarboxylate, 98%	14924-53-9
168489	3-Oxo-cyclobutanecarboxylic acid, 95%	23761-23-1
586230	2,2,4,4-Tetramethyl-1,3-cyclobutanediol, 99%, mixture of isomers	3010-96-6

## ■ Oxetanes

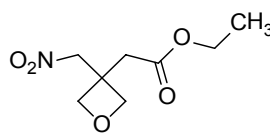
919056



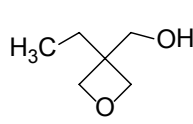
1606058



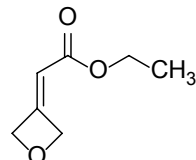
1586563



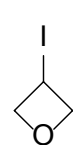
430627



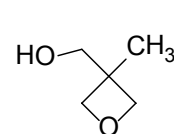
1238549



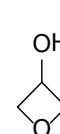
1172369



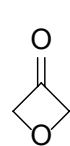
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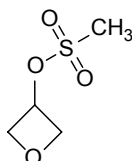
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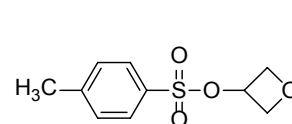
835702



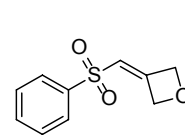
1588845



1217779



1761589



## Four-Membered Ring Compounds

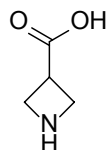
Cat. No.	Description	CAS
919056	3-Bromooxetane, 97%	39267-79-3
1606058	Ethyl 2-[3-(benzylamino)oxetan-3-yl] acetate, 95%	1207175-55-0
1586563	Ethyl 2-[3-(nitromethyl)oxetan-3-yl] acetate, 95%	1045709-38-3
430627	3-Ethyl-3-oxetanemethanol, 98%	3047-32-3
1238549	Ethyl 2-(oxetan-3-ylidene)acetate, 95%	922500-91-2
1172369	3-Iodooxetane, 97%	26272-85-5
515501	3-Methyl-3-oxetanemethanol, 97.5%	3143-02-0
1014947	3-Oxetanol, 95%	7748-36-9
835702	Oxetan-3-one, 95%	6704-31-0
1588845	Oxetan-3-yl methanesulfonate, 95%	148430-81-3
1217779	3-Oxetanyl p-toluenesulfonate, 95%	26272-83-3
1761589	3-[(Phenylsulfonyl)methylene]oxetane, 95%	1221819-46-0

### ■ Azetidines

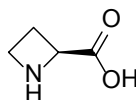
246240



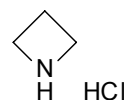
172318



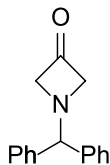
237409



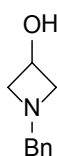
474517



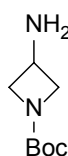
227296



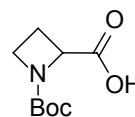
626360



104410

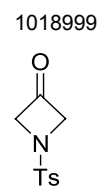
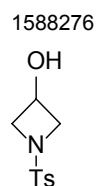
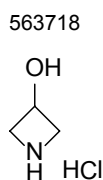
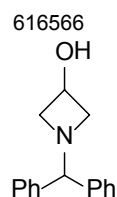
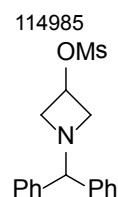
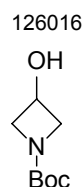
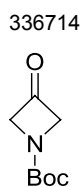
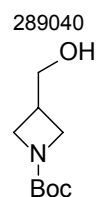
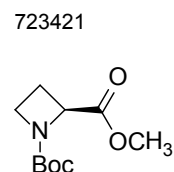
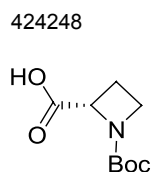
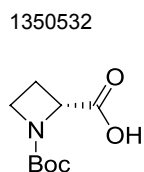
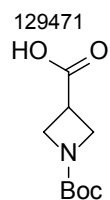


248583



Cat. No.	Description	CAS
246240	Azetidine, 95%	503-29-7
172318	Azetidine-3-carboxylic acid, 98%	36476-78-5
237409	L-Azetidine-2-carboxylic acid, 98%	2133-34-8
474517	Azetidine hydrochloride, 99%	36520-39-5
227296	1-Benzhydryl-3-azetidinone, 97%	40320-60-3
626360	1-Benzyl-3-hydroxyazetidine, 97%	54881-13-9
104410	1-Boc-3-aminoazetidine, 95%	193269-78-2
248583	N-Boc-azetidine-2-carboxylic acid, 97%	159749-28-7

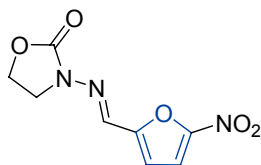
# Four-Membered Ring Compounds



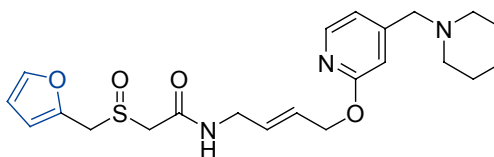
Cat. No.	Description	CAS
129471	1-Boc-azetidine-3-carboxylic acid, 97%	142253-55-2
1350532	1-Boc-D-azetidine-2-carboxylic acid, 97%	228857-58-7
424248	1-Boc-L-azetidine-2-carboxylic acid, 95%	51077-14-6
723421	(S)-N-Boc-Azetidine-2-carboxylic acid methyl ester, 97%	107020-12-2
289040	1-Boc-3-azetidinemethanol, 98%	142253-56-3
336714	1-Boc-3-azetidinone, 98%	398489-26-4
126016	1-Boc-3-hydroxyazetidine, 97%	141699-55-0
114985	1-(Diphenylmethyl)-3-azetidiny methanesulfonate, 97%	33301-41-6
616566	1-(Diphenylmethyl)-3-hydroxyazetidine, 98%	18621-17-5
563718	3-Hydroxyazetidine hydrochloride, 97%	18621-18-6
1588276	1-[(4-Methylphenyl)sulfonyl]-3-azetidinol, 95%	154010-96-5
1018999	1-Tosylazetidin-3-one, 95%	76543-27-6

The structural unit of furan is the basic skeleton of many naturally occurring products. Furan derivatives have differing pharmacological activities. For example, an iodinated lipophilic furan derivative is used as a drug in the treatment of ventricular and atrial fibrillation. Besides pharmaceutical applications, they are also widely used in the fragrance and food industries.

e.g.

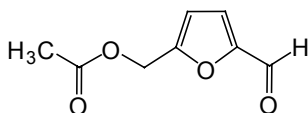


Furazolidone

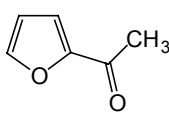


Lafutidine

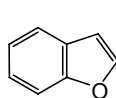
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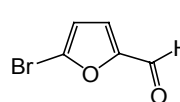
298066



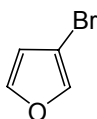
184895



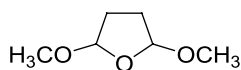
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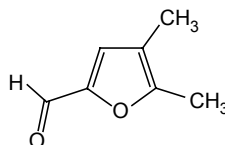
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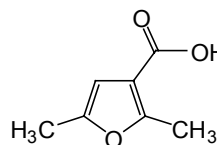
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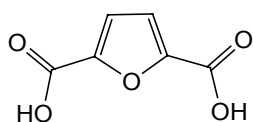
243596



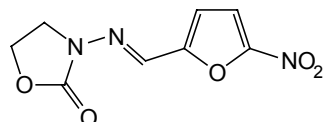
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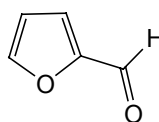
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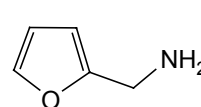
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284854



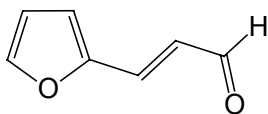
444186



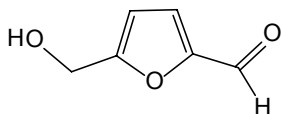
Cat. No.	Description	CAS
210259	5-Acetoxymethyl-2-furaldehyde, 97%	10551-58-3
298066	2-Acetylfuran, 98%	1192-62-7
184895	2,3-Benzofuran, 97%	271-89-6
270342	5-Bromo-2-furaldehyde, 98%	1899-24-7
398298	3-Bromofuran, 97%	22037-28-1
296831	2,5-Dimethoxytetrahydrofuran, 98%, mixture of cis and trans	696-59-3
243596	4,5-Dimethyl-2-furancarboxaldehyde, 99%	52480-43-0
118313	2,5-Dimethyl-3-furoic acid, 98%	636-44-2
312727	2,5-Furandicarboxylic acid, 97%	3238-40-2
559614	Furazolidone, 98%	67-45-8
284854	Furfural, 99%	98-01-1
444186	Furfuryl amine, 99%	617-89-0

## Furans

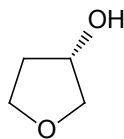
557559



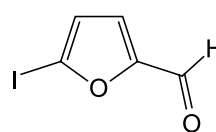
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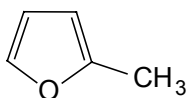
154331



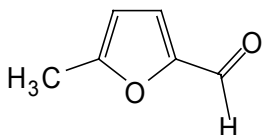
459594



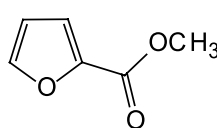
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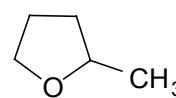
413777



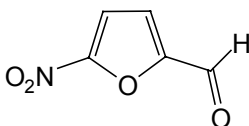
288944



203918



193378

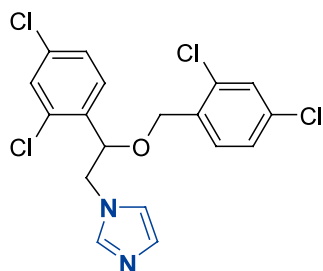


Cat. No.	Description	CAS
557559	3-(2-Furyl)acrolein, 98%	623-30-3
103511	5-(Hydroxymethyl)furfural, 98%	67-47-0
154331	(S)-(+)-3-Hydroxytetrahydrofuran, 98%, ee: 95%	86087-23-2
459594	5-Iodo-2-furaldehyde, 95%	2689-65-8
439032	2-Methylfuran, 99%	534-22-5
413777	5-Methylfurfural, 99%	620-02-0
288944	Methyl 2-furoate, 99%	611-13-2
203918	2-Methyltetrahydrofuran, 99%, stabilized with BHT	96-47-9
193378	5-Nitro-2-furaldehyde, 98%	698-63-5

Imidazole, classified as an alkaloid diazole, is well known as a “biological catalyst” in various important biological chemical reactions and plays a very important role in life activities.

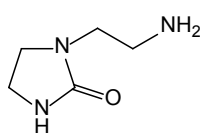
Imidazole and its derivatives are widely used as antifungal agents in the pharmaceutical industry and agriculture, and as effective hardeners and promoters in the materials industry.

e.g.

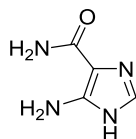


Miconazole

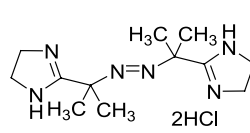
102188



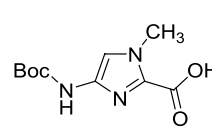
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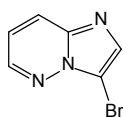
503236



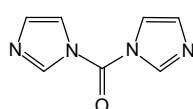
970191



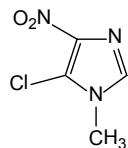
909638



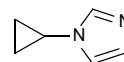
180331



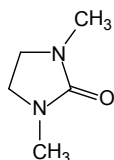
166496



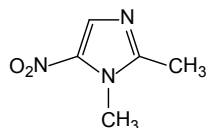
1594121



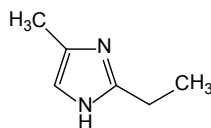
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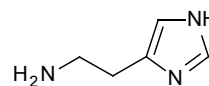
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392816



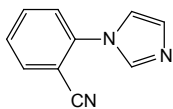
268984



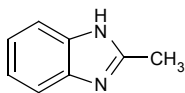
Cat. No.	Description	CAS
102188	1-(2-Aminoethyl)imidazolidin-2-one, 96%	6281-42-1
541082	4-Amino-5-imidazolecarboxamide, 99%	360-97-4
503236	2,2'-Azobis[2-(2-imidazolyl)propane] dihydrochloride, 98%	27776-21-2
970191	4-(Boc-amino)-1-methyl-1H-imidazole-2-carboxylic acid, 95%, freeze-dried powder	128293-64-1
909638	3-Bromoimidazo[1,2-b]pyridazine, 97%	18087-73-5
180331	N,N'-Carbonyldiimidazole, 98%	530-62-1
166496	5-Chloro-1-methyl-4-nitroimidazole, 98%	4897-25-0
1594121	1-Cyclopropyl-1H-imidazole, 95%	135207-17-9
403061	1,3-Dimethyl-2-imidazolidinone, 99%	80-73-9
143537	Dimetridazole, 97%	551-92-8
392816	2-Ethyl-4-methylimidazole, 96%	931-36-2
268984	Histamine, 97%	51-45-6

## Imidazoles

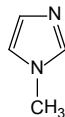
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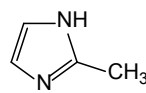
117095



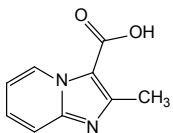
297212



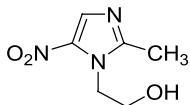
159278



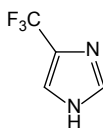
126328



274238



528930

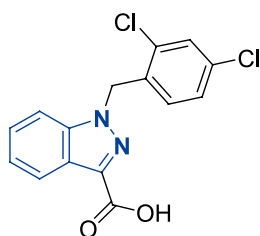


Cat. No.	Description	CAS
203389	2-(1H-Imidazol-1-yl)benzonitrile, 98%	25373-49-3
117095	2-Methylbenzimidazole, 98%	615-15-6
297212	1-Methylimidazole, 99%	616-47-7
159278	2-Methylimidazole, 99%	693-98-1
126328	2-Methylimidazo[1,2-a]pyridine-3-carboxylic acid, 97%	21801-79-6
274238	2-Methyl-5-nitro-1-imidazole ethanol, 99%	443-48-1
528930	4-(Trifluoromethyl)-1H-imidazole, 99%	33468-69-8

Indazole and its derivatives have a wide range of bioactivities. Indazole derivatives were found to have auto immunity and neuro-degeneration activities, to be inhibitors of protein kinase and disorders of cancer cell proliferation, and to be useful in treatment for Alzheimer's disease and viral infections.

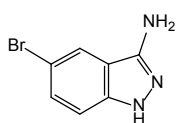
Recently, some indazole derivatives have been evaluated as drugs with a variety of potential physiological activities, some of which have been approved for clinical use.

e.g.

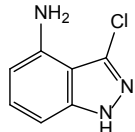


Lonidamine

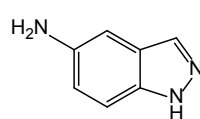
273062



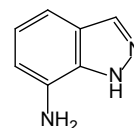
1542210



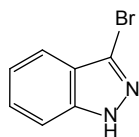
499170



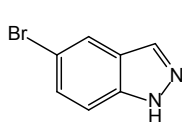
123429



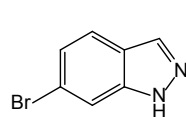
424233



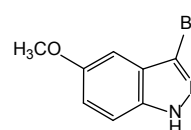
278393



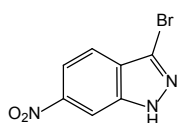
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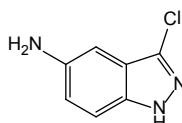
115676



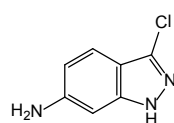
118787



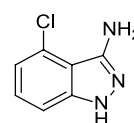
296194



215963



914536

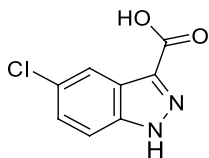


Cat. No.	Description	CAS
273062	3-Amino-5-bromo-1H-indazole, 97%	61272-71-7
1542210	4-Amino-3-chloro-1H-indazole, 99%	54768-48-8
499170	5-Amino-1H-indazole, 97%	19335-11-6
123429	7-Amino-1H-indazole, 97%	21443-96-9
424233	3-Bromo-1H-indazole, 97%	40598-94-5
278393	5-Bromo-1H-indazole, 98%	53857-57-1
219042	6-Bromoindazole, 95%	79762-54-2
115676	3-Bromo-5-methoxy-1H-indazole, 97%	885519-30-2
118787	3-Bromo-6-nitro-1H-indazole, 97%	70315-68-3
296194	3-Chloro-1H-indazol-5-amine, 97%	41330-49-8
215963	3-Chloro-1H-indazol-6-amine, 97%	21413-23-0
914536	4-Chloro-1H-indazol-3-amine, 95%	20925-60-4

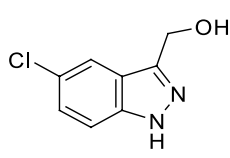


## Indazoles

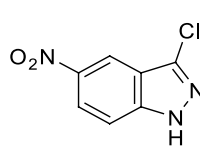
171382



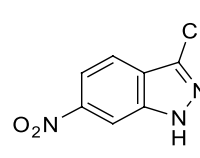
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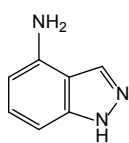
266509



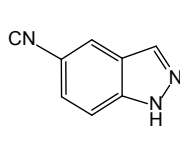
293114



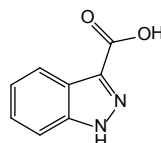
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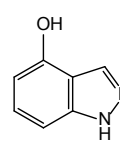
193104



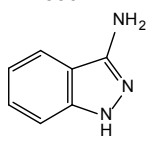
225831



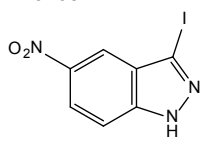
113408



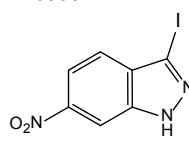
124530



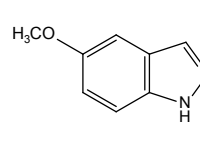
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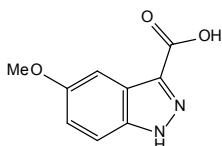
126998



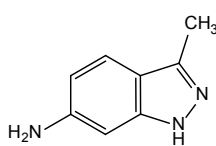
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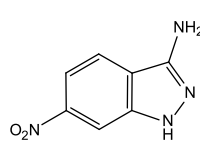
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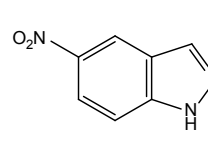
784784



227808



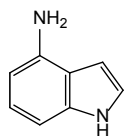
128335



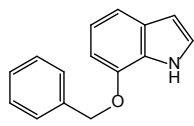
Cat. No.	Description	CAS
171382	5-Chloro-1H-indazole-3-carboxylic acid, 97%	1077-95-8
203300	(5-Chloro-1H-indazol-3-yl)methanol, 97%	102735-90-0
266509	3-Chloro-5-nitro-1H-indazole, 97%	4812-45-7
293114	3-Chloro-6-nitro-1H-indazole, 97%	50593-68-5
202770	1H-Indazol-4-amine, 97%	41748-71-4
193104	1H-Indazole-5-carbonitrile, 97%	74626-47-4
225831	Indazole-3-carboxylic acid, 98%	4498-67-3
113408	1H-Indazol-4-ol, 97%	81382-45-8
124530	1H-Indazol-3-ylamine, 97%	874-05-5
410765	3-Iodo-5-nitro-1H-indazole, 97%	70315-69-4
126998	3-Iodo-6-nitro-1H-indazole, 97%	70315-70-7
127427	5-Methoxy-1H-indazole, 97%	94444-96-9
274100	5-Methoxy-1H-indazole-3-carboxylic acid, 97%	90417-53-1
784784	3-Methyl-1H-indazol-6-ylamine, 97%	79173-62-9
227808	6-Nitro-1H-indazol-3-amine, 97%	1027259-01-3
128335	5-Nitro-1H-indazole, 98%	5401-94-5

Indole derivatives exist widely in nature and exhibit bioactivities such as antimicrobial and anti-tumor activities as antagonist inhibitors or receptors. They have been used in pharmaceutical, agricultural, flavor and functional material industries.

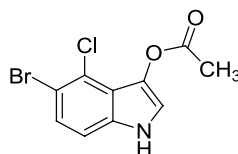
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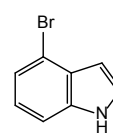
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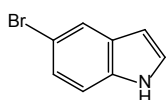
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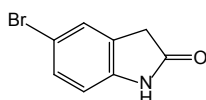
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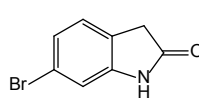
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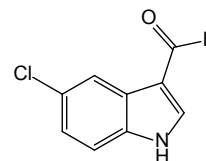
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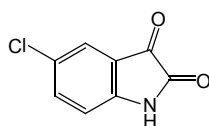
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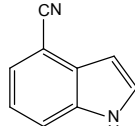
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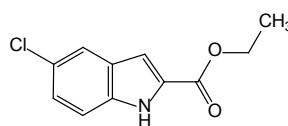
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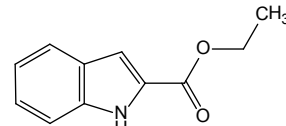
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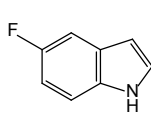
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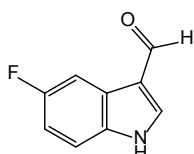
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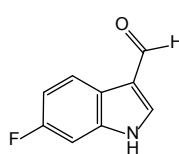
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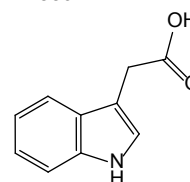
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366453



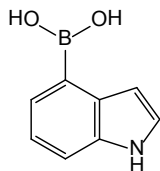
148807



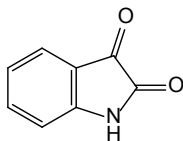
Cat. No.	Description	CAS
130926	4-Aminoindole, 97%	5192-23-4
106314	7-Benzyloxyindole, 98%	20289-27-4
518723	5-Bromo-4-chloro-3-indolyl acetate, 99%	3252-36-6
276170	4-Bromoindole, 95%	52488-36-5
141060	5-Bromoindole, 99%	10075-50-0
218763	5-Bromo-2-oxindole, 98%	20870-78-4
180562	6-Bromo-2-oxindole, 98%	99365-40-9
404592	5-Chloroindole-3-carboxaldehyde, 98%	827-01-0
132815	5-Chloroisatin, 98%	17630-76-1
357852	4-Cyanoindole, 98%	16136-52-0
255779	Ethyl 5-chloro-2-indolecarboxylate, 97%	4792-67-0
183725	Ethyl 1H-indole-2-carboxylate, 97%	3770-50-1
202982	5-Fluoroindole, 98%	399-52-0
482884	5-Fluoroindole-3-carboxaldehyde, 98%	2338-71-8
366453	6-Fluoroindole-3-carboxaldehyde, 97%	2795-41-7
148807	3-Indoleacetic acid, 99%	87-51-4

## Indoles

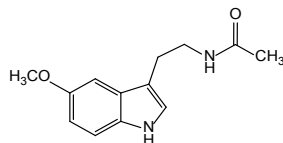
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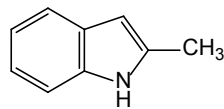
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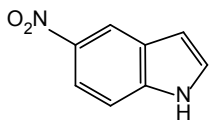
211835



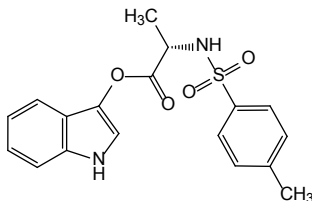
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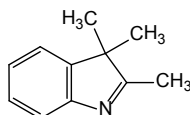
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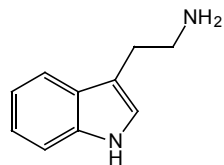
227676



456271



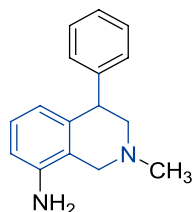
287200



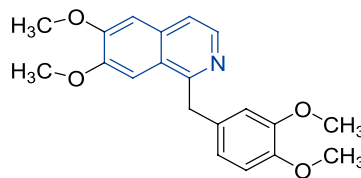
Cat. No.	Description	CAS
140293	Indole-4-boronic acid, 97%	220465-43-0
552759	Isatin, 98%	91-56-5
211835	Melatonin, 99%	73-31-4
128701	2-Methylindole, 98%	95-20-5
131543	5-Nitroindole, 98%	6146-52-7
227676	N-Tosyl-L-alanyloxyindole, H-TOS-ALA-Y, 97%	75062-54-3
456271	2,3,3-Trimethylindolenine, 97.5%	1640-39-7
287200	Tryptamine, 98%	61-54-1

The isoquinoline moiety is one of the privileged structural analog of naphthalene in which the  $\beta$ -CH group is replaced by a nitrogen atom. Nomifensine is an isoquinoline based drug and is used to treat depression. Papaverine, an isoquinoline alkaloid, is the most important spasmolysis medicine.

e.g.

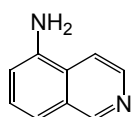


Nomifensine

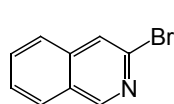


Papaverine

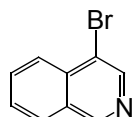
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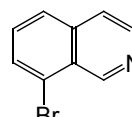
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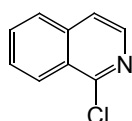
277189



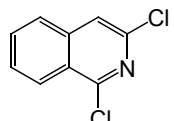
404301



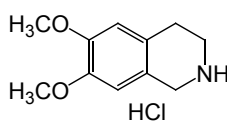
441279



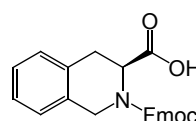
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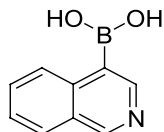
367853



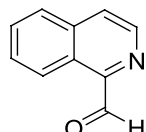
490354



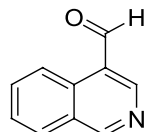
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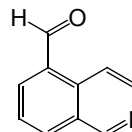
590296



503584



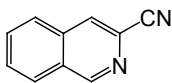
403701



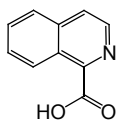
Cat. No.	Description	CAS
139341	5-Aminoisoquinoline, 98.5%	1125-60-6
553346	3-Bromoisquinoline, 99%	34784-02-6
277189	4-Bromoisquinoline, 98%	1532-97-4
404301	8-Bromoisquinoline, 97%	63927-22-0
441279	1-Chloroisquinoline, 97%	19493-44-8
105434	1,3-Dichloroisquinoline, 97%	7742-73-6
367853	6,7-Dimethoxy-1,2,3,4-tetrahydroisoquinoline hydrochloride, 97%	2328-12-3
490354	Fmoc-L-1,2,3,4-Tetrahydroisoquinoline-3-carboxylic acid, 98%	136030-33-6
149193	Isoquinoline-4-boronic acid, 97%	192182-56-2
590296	Isoquinoline-1-carbaldehyde, 97%	4494-18-2
503584	Isoquinoline-4-carbaldehyde, 98%	22960-16-3
403701	Isoquinoline-5-carbaldehyde, 98%	80278-67-7

## Isoquinolines

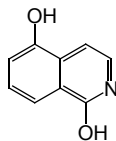
512267



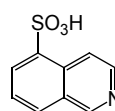
268873



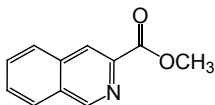
438800



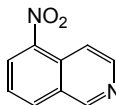
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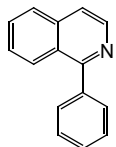
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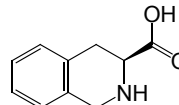
185302



791974



225711



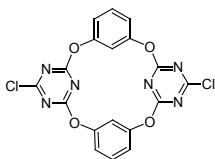
Cat. No.	Description	CAS
512267	3-Isoquinolinecarbonitrile, 98%	26947-41-1
268873	Isoquinoline-1-carboxylic acid, 99%	486-73-7
438800	1,5-Isoquinolinediol, 97%	5154-02-9
970660	5-Isoquinolinesulfonic acid, 99.9%	27655-40-9
149322	Methyl 3-isoquinolinecarboxylate, 98%	27104-73-0
185302	5-Nitroisoquinoline, 98%	607-32-9
791974	1-Phenylisoquinoline, 98%	3297-72-1
225711	(S)-1,2,3,4-Tetrahydroisoquinoline-3-carboxylic acid, 98%	74163-81-8

Macrocyclic compounds are important tools to study chemistry and supramolecular science.

They are in an indispensable position in molecular recognition, molecular assembly, and functional materials building and so on. As a professional supplier, J&K offers a complete inventory of macrocyclic compounds include:

## ■ Heterocalixaromatics and Corona[n]arenes

1938031



819065-56-0

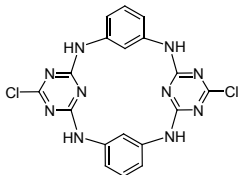
Dichloro-oxacalix[2]arene[2]triazine, 95%

1: A versatile platform for functionalized oxacalix[2]arene[2]triazines based on convenient and practical nucleophilic aromatic substitutions<sup>[1]</sup>.

2: A selective macrocyclic host for hydrogen bond donors<sup>[2]</sup>.

3: A powerful macrocyclic host for study of anion recognition by means of the formation of anion- $\pi$  complexes<sup>[3]</sup>.

1938032



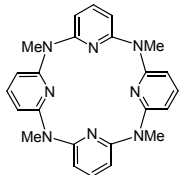
51421-67-1

Dichloro-diazadioxacalix[2]arene[2]triazine, 95%

1: A versatile platform for functionalized oxacalix[2]arene[2]triazines based on convenient and practical nucleophilic aromatic substitutions on chlorotriazines and functionalization on the bridging nitrogen atoms<sup>[4]</sup>.

2: A powerful component for molecular self-assembly because of the formation of a hydrogen bond network<sup>[2]</sup>.

1938033



502763-15-7

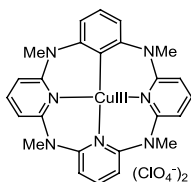
Tetraazacalix[4]pyridine, 95%

1: A versatile and selective macrocyclic host for transition metal ions.

2: A selective macrocyclic host for hydrogen bond donors<sup>[2]</sup>.

3: A potential Lewis base catalyst for synthesis<sup>[5]</sup>.

1938034



1169706-62-0

Phenylcopper(III) perchlorate, 95%

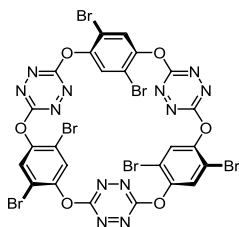
1: A robust high valent organocopper(III) complex serves as a molecular tool for the study of copper-catalyzed arene C-H bond activation<sup>[6]</sup>.

2: A robust high valent organocopper(III) complex serves as a molecular tool for the study of copper-catalyzed cross-coupling reactions of aryl halides and triflates<sup>[7-9]</sup>.

3: An invaluable intermediate for the synthesis of functionalized azacalix[1]arene[3]pyridine derivatives<sup>[9]</sup>.

# Macrocyclic Compounds

1938035



1642594-07-7

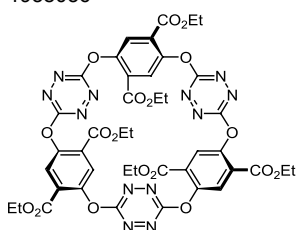
Hexabromo-O6-corona[3]arene[3]tetrazine,  
95%

1: An electron-deficient macrocyclic host for molecular recognition and self-assembly.

2: A platform for functionalized coronarenes based on convenient and practical reactions of dibromobenzene moieties<sup>[10]</sup>.

3: A unique macrocyclic host for the study of anion- $\pi$  interactions<sup>[11]</sup>.

1938036



1642594-08-8

Hexester-O6-corona[3]arene[3]tetrazine,  
95%

1: An electron-deficient macrocyclic host for molecular recognition and self-assembly.

2: A platform for functionalized coronarenes based on convenient and practical reactions of ester moieties<sup>[10]</sup>.

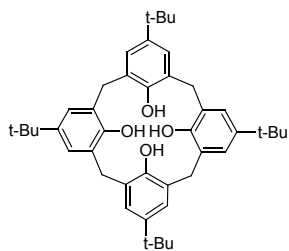
3: A unique macrocyclic host for the study of anion- $\pi$  interactions<sup>[11]</sup>.

## References

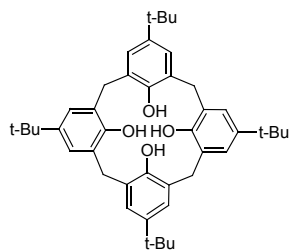
- [1] Wang, Q. Q.; Wang, D. X.; Yang, H. B.; Huang, Z. T.; Wang, M. X. Synthesis, structure and molecular recognition of functionalised tetraoxacalix[2]arene[2]triazines. *Chem. Eur. J.* **2010**, *16*, 7265-7275.
- [2] Wang, M. X. Nitrogen and oxygen bridged calixaromatics: synthesis, structure, functionalization, and molecular recognition. *Acc. Chem. Res.* **2012**, *45*, 182-195.
- [3] Wang, D. X.; Wang, M. X. Anion- $\pi$  interactions: generality, binding strength, and structure. *J. Am. Chem. Soc.* **2013**, *135*, 892-897.
- [4] Wang, Q. Q.; Wang, D. X.; Ma, H. W.; Wang, M. X. Synthesis of tetraazacalix[2]arene[2]triazines: tuning the cavity by the substituents on the bridging nitrogen atoms. *Org. Lett.* **2006**, *8*, 5967-5970.
- [5] Gong, H. Y.; Wang, D. X.; Zheng, Q. Y.; Wang, M. X. Highly selective complexation of metal ions by the self-tuning tetraazacalixpyridine macrocycles. *Tetrahedron*, **2009**, *65*, 87-92.
- [6] Yao, B.; Wang, D. X.; Huang, Z. T.; Wang, M. X. Room-temperature aerobic formation of a stable aryl-Cu(III) complex and its reactions with nucleophiles: highly efficient and diverse arene C-H functionalizations of azacalix[1]arene[3]pyridine. *Chem. Commun.* **2009**, 2899-2901.
- [7] Zhang, H.; Yao, B.; Zhao, L.; Wang, D. X.; Xu, B. Q.; Wang, M. X. Direct Synthesis of High-Valent Aryl-Cu(II) and Aryl-Cu(III) Compounds: Mechanistic insight into arene C-H bond metalation. *J. Am. Chem. Soc.* **2014**, *136*, 6326-6332.
- [8] Yao, B.; Liu, Y.; Zhao, L.; Wang, D. X.; Wang, M. X. Designing a Cu(II)-ArCu(II)-ArCu(III)-Cu(I) catalytic cycle: Cu(II)-catalyzed oxidative arene C-H bond azidation with air as an oxidant under ambient conditions. *J. Org. Chem.* **2014**, *79*, 11139-11145.
- [9] Long, C.; Zhao, L.; You, J. S.; Wang, M. X. Copper(I)-catalyzed halogenation and acyloxylation of aryl triflates through a copper(I)/copper(III) catalytic cycle. *Organometallics*. **2014**, *33*, 1061-1067.
- [10] Guo, Q. H.; Fu, Z. D.; Zhao, L.; Wang, M. X. Synthesis, structure, and properties of O6-corona[3]arene[3]tetrazines. *Angew Chem. Int. Ed.* **2014**, *53*, 13548-13552.
- [11] Guo, Q. H.; Zhao, L.; Wang, M. X. Synthesis and molecular recognition of water-soluble S6-corona[3]arene[3]pyridazines. *Angew Chem. Int. Ed.* **2015**, *54*, 8386-8389.

## ■ Calixarenes

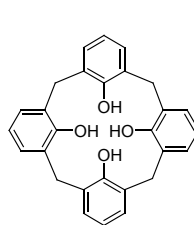
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356860



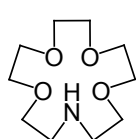
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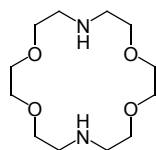
Cat. No.	Description	CAS
905086	4-tert-Butylcalix[4]arene, 98%	60705-62-6
356860	4-tert-Butylcalix[4]arene, 99%	60705-62-6
620628	Calix[4]arene, 98%	74568-07-3

## ■ Crown Ether

108933



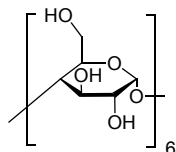
306601



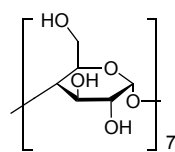
Cat. No.	Description	CAS
108933	1-Aza-15-crown-5, 98%	66943-05-3
306601	4,13-Diaza-18-crown-6-ether, 96%	23978-55-4

## ■ Cyclodextrin

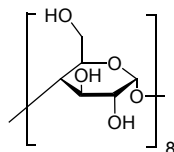
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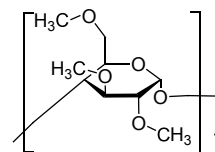
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474982



540879

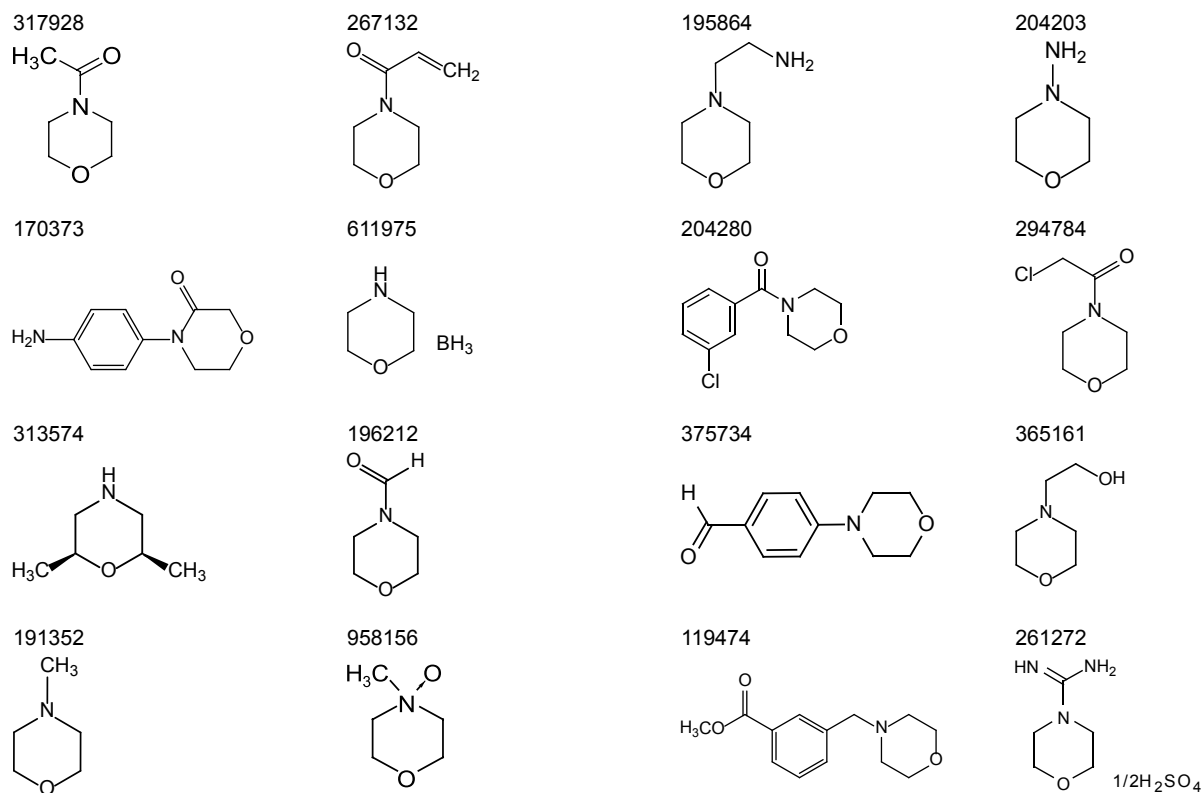


Cat. No.	Description	CAS
181931	α-Cyclodextrin, 98%	10016-20-3
972167	β-Cyclodextrin, 98%	7585-39-9
474982	γ-Cyclodextrin, 98%	17465-86-0
540879	Trimethyl-β-cyclodextrin, 98%	55216-11-0



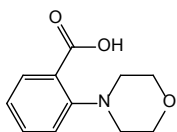
# Morpholines

Morpholine and its derivatives are versatile chemicals. Morpholine moiety consists of a six-membered ring with one nitrogen atom and one oxygen atom in opposite positions. Morpholine and its derivatives are widely used in the manufacturing of rubber, pharmaceuticals, and cosmetics. They also have a broad variety of applications as crop protection agents, dyes and optical brighteners.

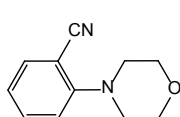


Cat. No.	Description	CAS
317928	4-Acetylmorpholine, 98%	1696-20-4
267132	4-Acryloylmorpholine, 98%	5117-12-4
195864	4-(2-Aminoethyl)morpholine, 99%	2038-03-1
204203	4-Aminomorpholine, 97%	4319-49-7
170373	4-(4-Aminophenyl)morpholin-3-one, 97%	438056-69-0
611975	Borane morpholine complex, NSC 93813, 97%	4856-95-5
204280	4-(3-Chlorobenzoyl)morpholine, 98%	26162-86-7
294784	2-Chloro-1-morpholin-4-yl-ethanone, 98%	1440-61-5
313574	cis-2,6-Dimethylmorpholine, 96%	6485-55-8
196212	N-Formylmorpholine, 99%	4394-85-8
375734	4-(4-Formylphenyl)morpholine, 97%	1204-86-0
365161	4-(2-Hydroxyethyl)morpholine, 99%	622-40-2
191352	N-Methylmorpholine, 99.5%	109-02-4
958156	4-Methylmorpholine N-oxide, 97%	7529-22-8
119474	Methyl 3-(morpholinomethyl)benzoate, 98%	190660-95-8
261272	Morpholine-4-carboxamide hemisulfate, 97%	17238-55-0

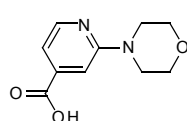
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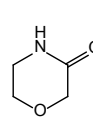
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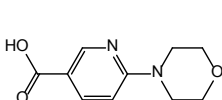
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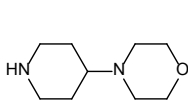
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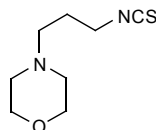
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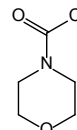
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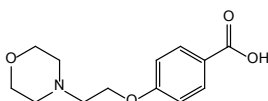
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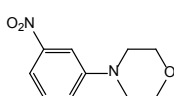
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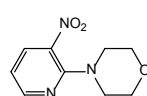
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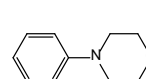
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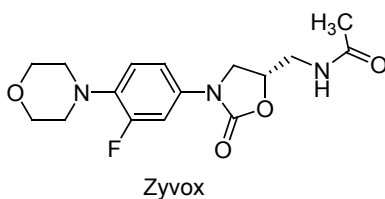
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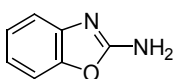
Cat. No.	Description	CAS
146749	2-Morpholinobenzoic acid, 97%	42106-48-9
140955	2-(4-Morpholino)benzonitrile, 98%	204078-32-0
292603	2-Morpholinoisonicotinic acid, 97%	295349-64-3
187786	Morpholin-3-one, 95%	109-11-5
106047	6-Morpholinonicotinic acid, 97%	120800-52-4
521725	4-Morpholinopiperidine, 98%	53617-35-9
822738	3-(4-Morpholino)propyl isothiocyanate, 98%	32813-50-6
451000	4-Morpholinylcarbonyl chloride, 98%	15159-40-7
189533	4-(2-Morpholin-4-yl-ethoxy)-benzoic acid, 97%	134599-45-4
246607	4-(3-Nitrophenyl)morpholine, 96%	116922-22-6
151616	4-(3-Nitro-2-pyridinyl)morpholine, 97%	24255-27-4
380123	4-Phenylmorpholine, 98%	92-53-5

# Oxazoles

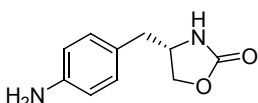
An oxazole ring is a very important five-membered heterocycle containing nitrogen and oxygen atoms. The unique structure of an oxazole moiety causes its derivatives to exhibit various bioactivities and special properties. They are widely used in the medicinal and agrochemical fields as well as in material sciences among others. An example of such an application is Zyvox which is used to treat different types of bacterial infections.



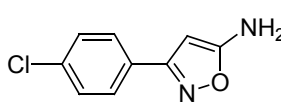
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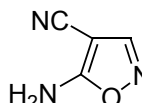
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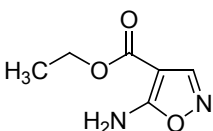
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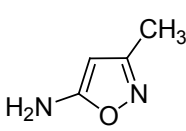
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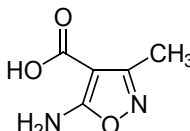
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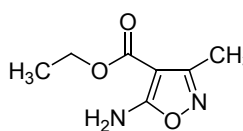
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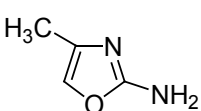
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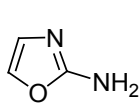
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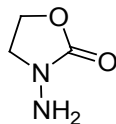
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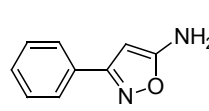
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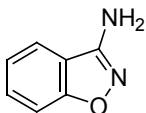
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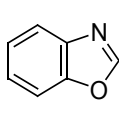
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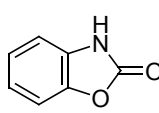
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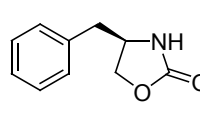
270360



531846

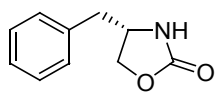


288385

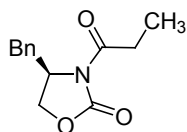


Cat. No.	Description	CAS
453173	2-Aminobenzoxazole, 97%	4570-41-6
185834	(S)-4-(4-Aminobenzyl)-2-oxazolidinone, 98%	152305-23-2
208154	5-Amino-3-(4-chlorophenyl)isoxazole, 97%	33866-48-7
188737	5-Aminoisoxazole-4-carbonitrile, 97%	98027-17-9
188456	5-Amino-4-isoxazolecarboxylic acid ethyl ester, 97%	34859-64-8
191326	5-Amino-3-methylisoxazole, 98%	14678-02-5
245845	5-Amino-3-methylisoxazole-4-carboxylic acid, 97%	84661-50-7
239348	5-Amino-3-methyl-isoxazole-4-carboxylic acid ethyl ester, 97%	25786-72-5
259459	2-Amino-4-methyloxazole, 97%	35629-70-0
310974	2-Amino-1,3-oxazole, 97%	4570-45-0
531077	3-Amino-2-oxazolidinone, 98%	80-65-9
209262	5-Amino-3-phenylisoxazole, 97%	4369-55-5
256631	1,2-Benzisoxazol-3-amine, 97%	36216-80-5
270360	Benzoxazole, 99%	273-53-0
531846	2-Benzoxazolinone, 98%	59-49-4
288385	(R)-4-Benzyl-2-oxazolidinone, 99%	102029-44-7

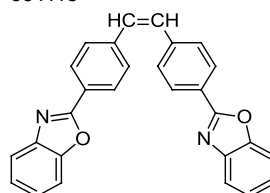
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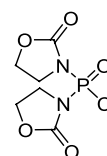
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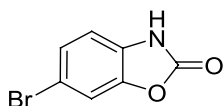
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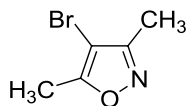
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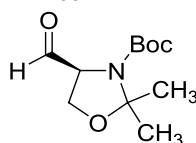
633301



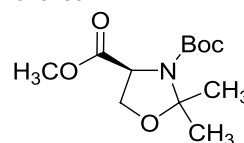
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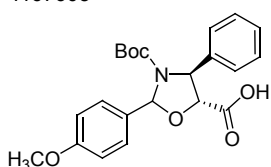
224233



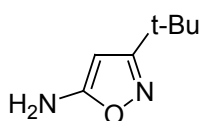
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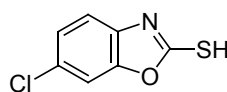
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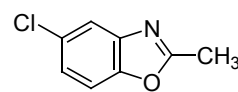
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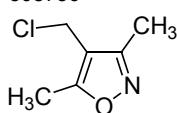
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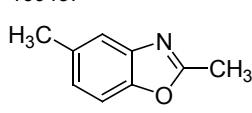
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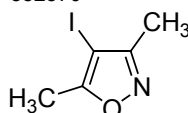
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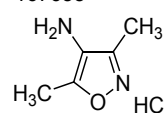
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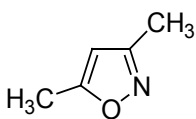
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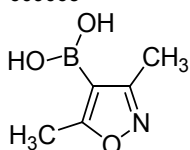
Cat. No.	Description	CAS
192058	(S)-4-Benzyl-2-oxazolidinone, 99%	90719-32-7
250526	(R)-(-)-4-Benzyl-3-propionyl-2-oxazolidinone, 99%, ee: 99%	131685-53-5
351118	4,4'-Bis(2-benzoxazolyl)stilbene, 97%	1533-45-5
195731	Bis(2-oxo-3-oxazolidinyl)phosphinic chloride, 97%	68641-49-6
633301	6-Bromo-benzoxazolinone, 95%	19932-85-5
411420	4-Bromo-3,5-dimethylisoxazole, 95%	10558-25-5
224233	(S)-(-)-3-(tert-Butoxycarbonyl)-4-formyl-2,2-dimethyl-1,3-oxazolidine, 95%	102308-32-7
615489	(S)-(-)-3-tert-Butoxycarbonyl-4-methoxycarbonyl-2,2-dimethyl-1,3-oxazolidine, 98%	108149-60-6
1167603	(4S,5R)-3-(tert-Butoxycarbonyl)-2-(4-methoxyphenyl)-4-phenyl-1,3-oxazolidine-5-carboxylic acid, 98.5%	196404-55-4
125218	3-tert-Butylisoxazol-5-amine, 97%	59669-59-9
176792	6-Chloro-2-benzoxazolethiol, 98%	22876-20-6
343189	5-Chloro-2-methylbenzoxazole, 98%	19219-99-9
508756	4-Chloromethyl-3,5-dimethylisoxazole, 95%	19788-37-5
160457	2,5-Dimethylbenzoxazole, 98%	5676-58-4
532570	3,5-Dimethyl-4-iodoisoxazole, 97%	10557-85-4
167635	3,5-Dimethylisoxazol-4-amine hydrochloride, 97%	127107-28-2

## Oxazoles

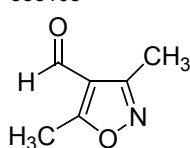
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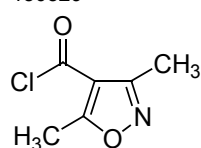
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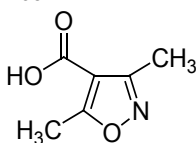
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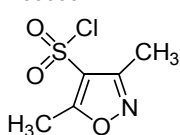
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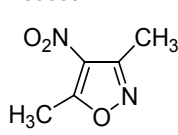
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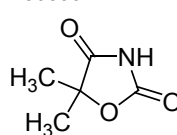
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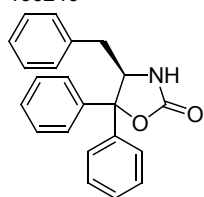
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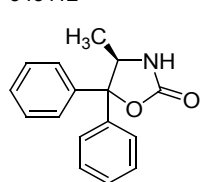
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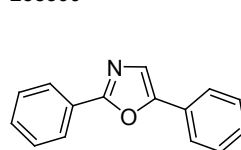
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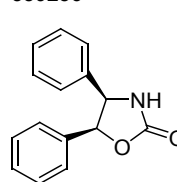
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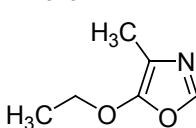
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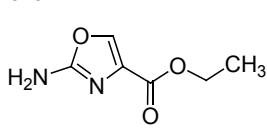
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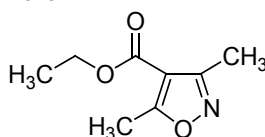
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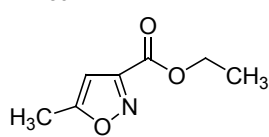
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181842

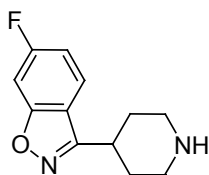


127894

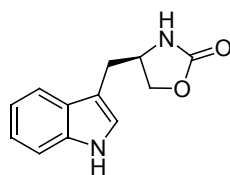


Cat. No.	Description	CAS
142661	3,5-Dimethylisoxazole, 97%	300-87-8
609063	3,5-Dimethylisoxazole-4-boronic acid, 97%	16114-47-9
353108	3,5-Dimethyl-4-isoxazolecarbaldehyde, 97%	54593-26-9
130329	3,5-Dimethylisoxazole-4-carbonyl chloride, 97%	31301-45-8
103771	3,5-Dimethylisoxazole-4-carboxylic acid, 98%	2510-36-3
250000	3,5-Dimethylisoxazole-4-sulfonyl chloride, 97%	80466-79-1
289685	3,5-Dimethyl-4-nitroisoxazole, 98%	1123-49-5
450399	5,5-Dimethyl-2,4-oxazolidinedione, 98%	695-53-4
166246	(R)-(+)-5,5-Diphenyl-4-benzyl-2-oxazolidinone, 98%	191090-40-1
343112	(R)-(+)-5,5-Diphenyl-4-methyl-2-oxazolidinone, 97%	223906-37-4
238390	2,5-Diphenyloxazole, 99%	92-71-7
339256	(4R,5S)-(+)-cis-4,5-Diphenyl-2-oxazolidinone, 98%	86286-50-2
147828	5-Ethoxy-4-methyloxazole, 98%	5006-20-2
329422	Ethyl 2-aminoxazole-4-carboxylate, 95%	177760-52-0
181842	Ethyl 3,5-dimethylisoxazole-4-carboxylate, 97%	17147-42-1
127894	Ethyl 5-methylisoxazole-3-carboxylate, 97%	3209-72-1

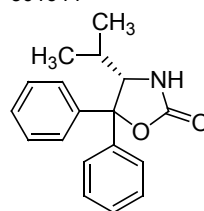
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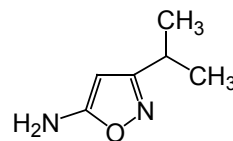
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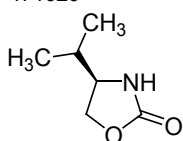
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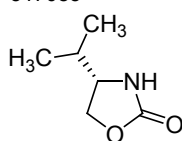
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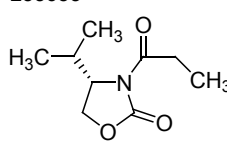
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517085



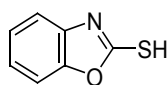
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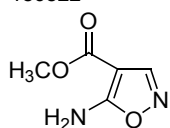
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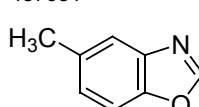
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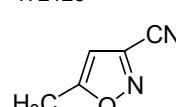
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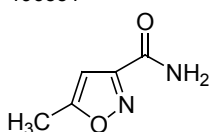
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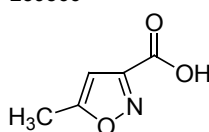
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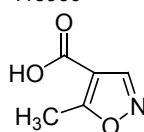
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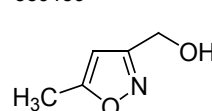
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415960



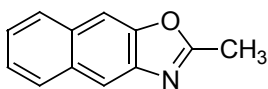
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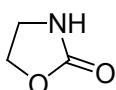
Cat. No.	Description	CAS
195312	6-Fluoro-3-(4-piperidinyl)-1,2-benzisoxazole, 98%	84163-77-9
553289	(R)-(-)-4-(1H-Indol-3-ylmethyl)-2-oxazolidinone, 98%	157636-81-2
301644	(S)-(-)-4-Isopropyl-5,5-diphenyl-2-oxazolidinone, 98%	184346-45-0
276726	3-Isopropylisoxazol-5-amine, 97%	88786-11-2
471029	(R)-(+)-4-Isopropyl-2-oxazolidinone, 99%	95530-58-8
517085	(S)-(-)-4-Isopropyl-2-oxazolidinone, 98%	17016-83-0
233653	(S)-(+)-4-Isopropyl-3-propionyl-2-oxazolidinone, 98%	77877-19-1
603646	Isoxazole, 98.5%	288-14-2
213351	2-Mercaptobenzoxazole, 99%	2382-96-9
186822	Methyl 5-aminoisoxazole-4-carboxylate, 95%	145798-74-9
487681	5-Methylbenzoxazole, 99.5%	10531-78-9
172128	5-Methylisoxazole-3-carbonitrile, 97%	57351-99-2
196551	5-Methylisoxazole-3-carboxamide, 97%	3445-52-1
239566	5-Methylisoxazole-3-carboxylic acid, 98.5%	3405-77-4
415960	5-Methylisoxazole-4-carboxylic acid, 99%	42831-50-5
559139	(5-Methylisoxazol-3-yl)methanol, 97%	35166-33-7

## Oxazoles

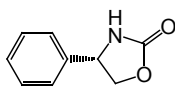
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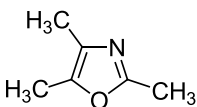
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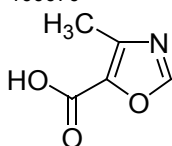
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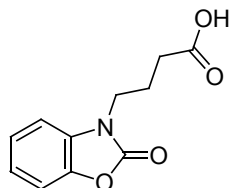
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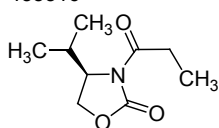
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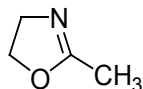
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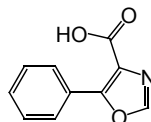
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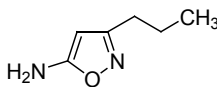
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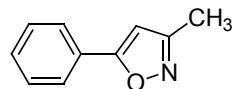
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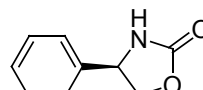
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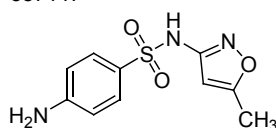
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246001



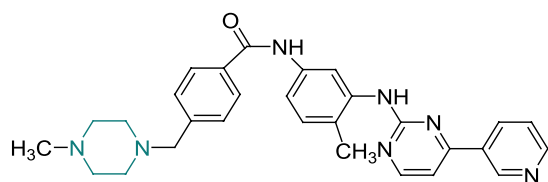
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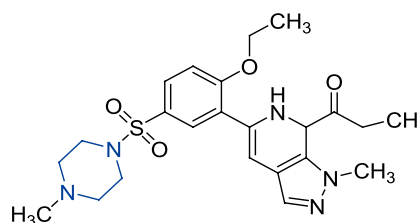
Cat. No.	Description	CAS
195838	2-Methylnaphth[2,3-d]oxazole, 98%	20686-66-2
100070	4-Methyl-1,3-oxazole-5-carboxylic acid, 97%	2510-32-9
614690	2-Methyl-2-oxazoline, 99%	1120-64-5
121365	3-Methyl-5-phenylisoxazole, 97%	1008-75-9
153206	2-Oxazolidinone, 98%	497-25-6
280470	4-(2-Oxo-benzooxazol-3-yl)-butyric acid, 97%	13610-66-7
198715	5-Phenyl-1,3-oxazole-4-carboxylic acid, 97%	99924-18-2
246001	(R)-4-Phenyloxazolidin-2-one, 99%	90319-52-1
492654	(S)-4-Phenyloxazolidin-2-one, 99%	99395-88-7
435316	(R)-(-)-3-Propionyl-4-isopropyl-2-oxazolidinone, 98%	89028-40-0
249600	3-Propylisoxazol-5-amine, 97%	747411-47-8
587147	Sulfamethoxazole, 98%	723-46-6
550102	2,4,5-Trimethyloxazole, 98%	20662-84-4

The introduction of piperazine moiety to an organic molecule can effectively increase the alkalinity and the water solubility of the substance because the piperazine scaffold contains a six-membered ring with two nitrogen atoms at opposite positions.

With such attractive biological activity, piperazine derivatives are used as building blocks in medicinal chemistry, such as imatinib and sildenafil. They are also used in the manufacturing of pesticides, surfactants, plastics, and resins.

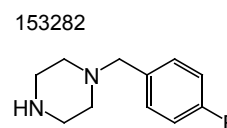
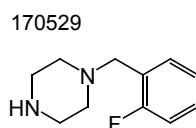
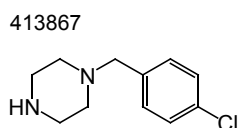
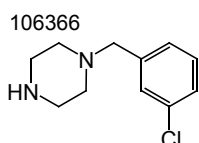


Imatinib



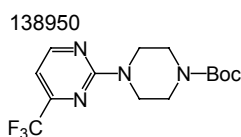
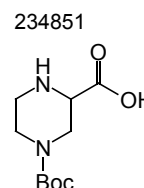
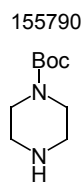
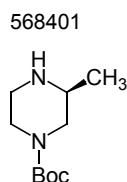
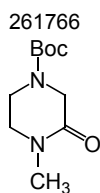
Sildenafil

## ■ Benzyl-piperazines



Cat. No.	Description	CAS
106366	1-(3-Chlorobenzyl)piperazine, 98%	23145-91-7
413867	1-(4-Chlorobenzyl)piperazine, 98%	23145-88-2
170529	1-(2-Fluorobenzyl)piperazine, 96%	89292-78-4
153282	1-(4-Fluorobenzyl)piperazine, 98%	70931-28-1

## ■ Boc-piperazines



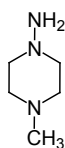
Cat. No.	Description	CAS
261766	1-Boc-4-methyl-3-oxopiperazine, 98%	109384-26-1
568401	(S)-1-Boc-3-methylpiperazine, 98%	147081-29-6
155790	1-Boc-piperazine, 98%	57260-71-6
234851	4-Boc-piperazine-2-carboxylic acid, 98%	128019-59-0
138950	tert-Butyl 4-[4-(trifluoromethyl)pyrimidin-2-yl]piperazine-1-carboxylate, 97%	668484-15-9



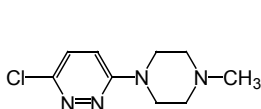
# Piperazines

## Methyl-piperazines

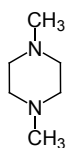
200248



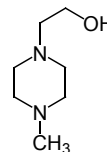
102186



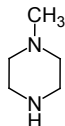
105600



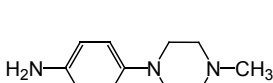
212514



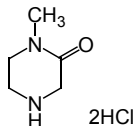
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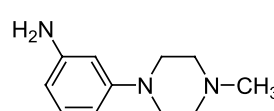
128829



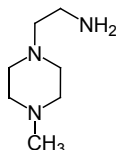
156792



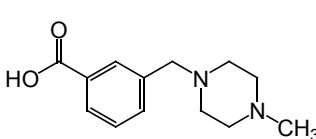
605619



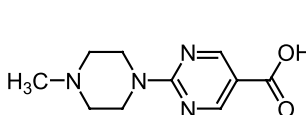
184488



176362



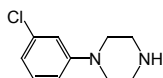
173791



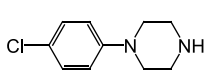
Cat. No.	Description	CAS
200248	1-Amino-4-methylpiperazine, 98%	6928-85-4
102186	3-Chloro-6-(4-methylpiperazin-1-yl) pyridazine, 97%	27464-17-1
105600	1,4-Dimethylpiperazine, 99%	106-58-1
212514	1-(2-Hydroxyethyl)-4-methyl-piperazine, 98%	5464-12-0
227406	1-Methylpiperazine, 99%	109-01-3
128829	4-(4-Methylpiperazino)aniline, 97%	16153-81-4
156792	1-Methylpiperazin-2-one dihydrochloride, 97%	1185292-91-4
605619	3-(4-Methylpiperazin-1-yl)aniline, 97%	148546-99-0
184488	2-(4-Methyl-piperazin-1-yl)-ethylamine, 98%	934-98-5
176362	3-(4-Methyl-piperazin-1-ylmethyl)-benzoic acid, 98%	514209-42-8
173791	2-(4-Methylpiperazin-1-yl)pyrimidine-5-carboxylic acid, 97%	1019115-09-3

## Phenyl-piperazines

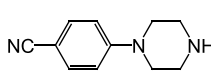
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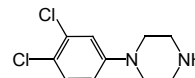
292601



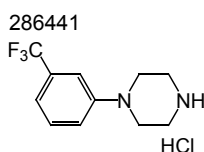
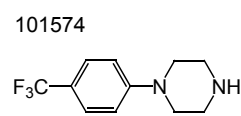
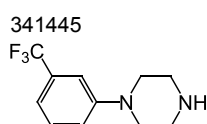
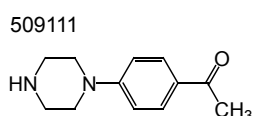
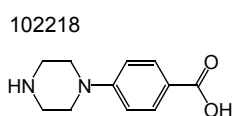
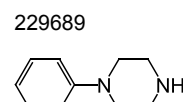
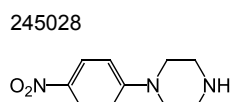
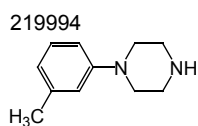
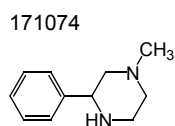
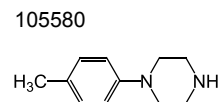
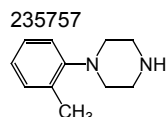
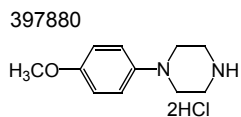
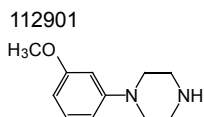
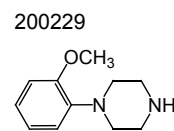
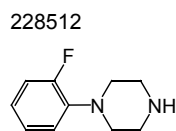
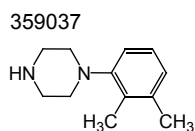
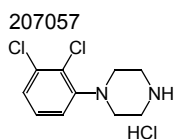
165473



244120



Cat. No.	Description	CAS
287024	1-(3-Chlorophenyl)piperazine, 98%	6640-24-0
292601	1-(4-Chlorophenyl)piperazine, 98%	38212-33-8
165473	1-(4-Cyanophenyl)piperazine, 97%	68104-63-2
244120	1-(3,4-Dichlorophenyl)piperazine, 98%	57260-67-0

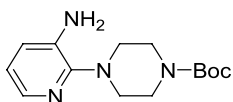


Cat. No.	Description	CAS
207057	1-(2,3-Dichlorophenyl)piperazine hydrochloride, 98%	119532-26-2
359037	1-(2,3-Dimethylphenyl)piperazine, 98%	1013-22-5
228512	1-(2-Fluorophenyl)piperazine, 98%	1011-15-0
200229	1-(2-Methoxyphenyl)piperazine, 98%	35386-24-4
112901	1-(3-Methoxyphenyl)piperazine, 97%	16015-71-7
397880	1-(4-Methoxyphenyl)piperazine dihydrochloride, 98%	38869-47-5
235757	1-(2-Methylphenyl)piperazine, 98%	39512-51-1
105580	1-(4-Methylphenyl)piperazine, 98%	39593-08-3
171074	1-Methyl-3-phenylpiperazine, 97%	5271-27-2
219994	1-(3-Methylphenyl)piperazine, 96%	41186-03-2
245028	1-(4-Nitrophenyl)piperazine, 98%	6269-89-2
229689	N-Phenylpiperazine, 98%	92-54-6
102218	4-Piperazin-1-yl-benzoic acid, 97%	85474-75-5
509111	1-(4-Piperazin-1-yl-phenyl)ethanone, 96%	51639-48-6
341445	1-(3-Trifluoromethylphenyl)piperazine, 99%	15532-75-9
101574	1-(4-Trifluoromethylphenyl)piperazine, 97%	30459-17-7
286441	1-( $\alpha,\alpha,\alpha$ -Trifluoro-m-tolyl)piperazine hydrochloride, 99%	16015-69-3

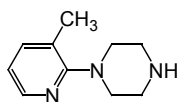
# Piperazines

## ■ Heterocyclic substituted piperazines

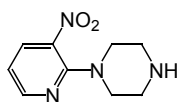
282431



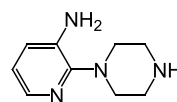
409477



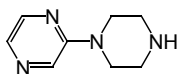
114011



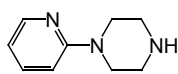
250553



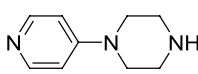
159169



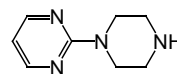
203857



278734



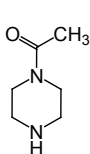
189608



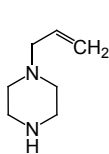
Cat. No.	Description	CAS
282431	3-Amino-2-[4-tert-butoxycarbonyl (piperazino)]pyridine, 97%	111669-25-1
409477	1-(3-Methyl-pyridin-2-yl)-piperazine, 98%	111960-11-3
114011	1-(3-Nitropyridin-2-yl)piperazine, 97%	87394-48-7
250553	2-(Piperazin-1-yl)pyridin-3-amine, 97%	87394-62-5
159169	1-(2-Pyrazinyl)piperazine, 98%	34803-68-4
203857	1-(2-Pyridyl)piperazine, 98%	34803-66-2
278734	1-(4-Pyridyl)piperazine, 97%	1008-91-9
189608	1-(2-Pyrimidyl)piperazine, 99%	20980-22-7

## ■ Others substituted piperazines

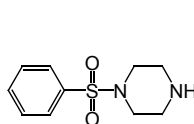
232908



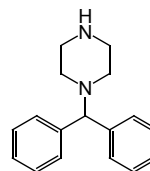
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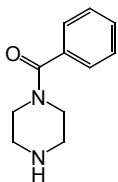
560009



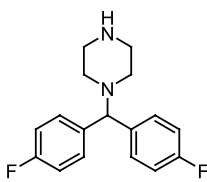
284350



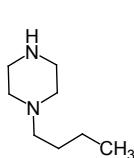
278158



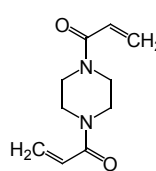
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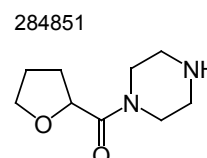
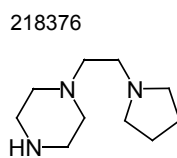
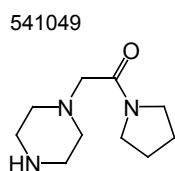
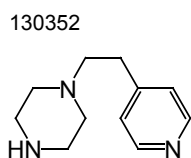
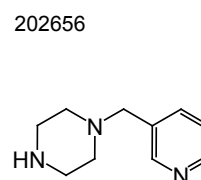
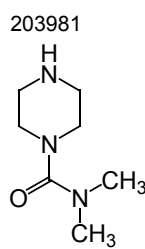
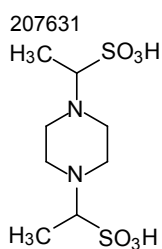
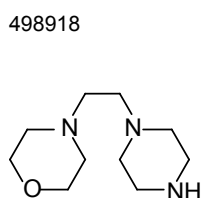
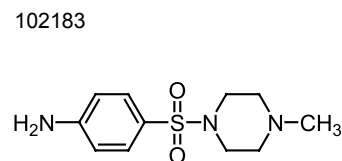
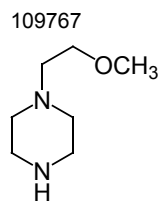
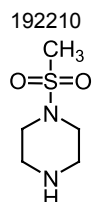
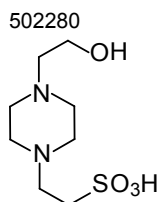
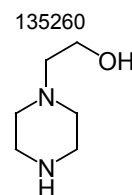
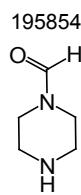
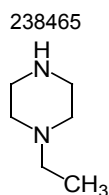
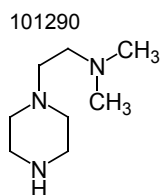
300941



141658



Cat. No.	Description	CAS
232908	1-Acetylpiperazine, 99%	13889-98-0
443517	1-Allylpiperazine, 98%	13961-36-9
560009	1-Benzenesulfonyl-piperazine, 98%	14172-55-5
284350	1-Benzhydrylpiperazine, 99%	841-77-0
278158	1-Benzoylpiperazine, 98%	13754-38-6
191311	1-[Bis(4-fluorophenyl)methyl]piperazine, 97%	27469-60-9
300941	1-Butylpiperazine, 98%	5610-49-1
141658	1,4-Diacryloylpiperazine, 97%	6342-17-2

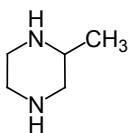


Cat. No.	Description	CAS
101290	1-(2-Dimethylaminoethyl)piperazine, 98%	3644-18-6
238465	N-Ethylpiperazine, 98%	5308-25-8
195854	1-Formylpiperazine, 98%	7755-92-2
135260	1-(2-Hydroxyethyl)piperazine, 98%	103-76-4
502280	4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid, 99%	7365-45-9
192210	1-Methanesulfonyl-piperazine, 98%	55276-43-2
109767	1-(2-Methoxyethyl)piperazine, 98%	13484-40-7
102183	4-(4-Methyl-piperazine-1-sulfonyl)-phenylamine, 98%	21623-68-7
498918	1-(2-(Morpholin-4-yl)-ethyl)-piperazine, 98%	4892-89-1
207631	Piperazine-N,N'-bis-2-ethanesulphonic acid, 99%	5625-37-6
203981	Piperazine-1-carboxylic acid dimethylamide, 98%	41340-78-7
202656	1-Pyridin-3-ylmethyl-piperazine, 97%	39244-80-9
130352	1-[2-(4-Pyridyl)ethyl]piperazine, 97%	53345-16-7
541049	1-[(Pyrrolidine-1-carbonyl)methyl] piperazine, 97%	39890-45-4
218376	1-(2-Pyrrolidinoethyl)piperazine, 98%	22763-69-5
284851	1-(Tetrahydro-2-furoyl)piperazine, 98%	63074-07-7

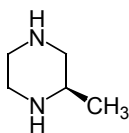
# Piperazines

## ■ Unsubstituted piperazines

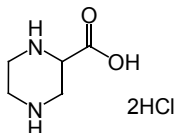
247151



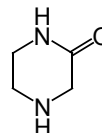
549995



101714



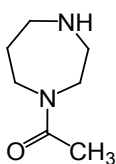
229101



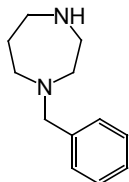
Cat. No.	Description	CAS
247151	2-Methylpiperazine, 99%	109-07-9
549995	(R)-(-)-2-Methylpiperazine, 98%	75336-86-6
101714	Piperazine-2-carboxylic acid dihydrochloride, 98%	3022-15-9
229101	Piperazin-2-one, 98%	5625-67-2

## ■ Homopiperazines

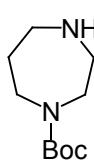
135370



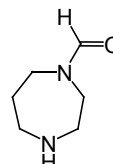
266063



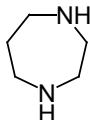
146747



459336



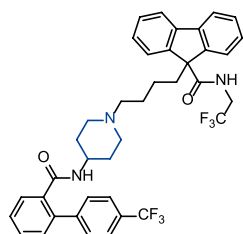
950806



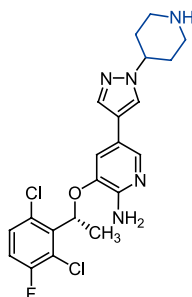
Cat. No.	Description	CAS
135370	N-Acetylhomopiperazine, 97%	61903-11-5
266063	1-Benzylhomopiperazine, 98%	4410-12-2
146747	1-Boc-homopiperazine, 98%	112275-50-0
459336	1-Formylhomopiperazine, 99%	29053-62-1
950806	Homopiperazine, 99%	505-66-8

Piperidine is a heterocyclic amine which consists of a six-membered ring containing five methylene bridges (-CH<sub>2</sub>-) and one amine bridge (-NH-). Pure piperidine is a colorless fuming liquid with an odor described as ammoniacal or pepper-like. This structure is a widely used building block and chemical reagent in the synthesis of organic compounds, especially in pharmaceuticals.

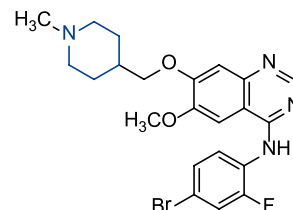
FDA has approved many drugs containing piperidine in recent years including:



Juxtapid (Lomitapide, 2012)



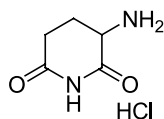
Xalkori (Crizotinib, 2011)



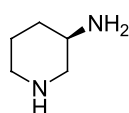
Vandetanib (2011)

## ■ N-H-Piperidines

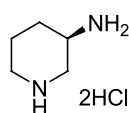
209475



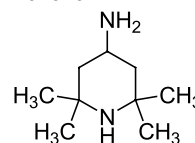
589565



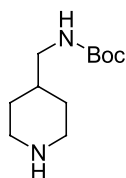
347504



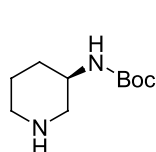
197320



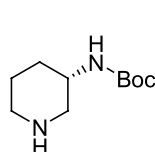
989088



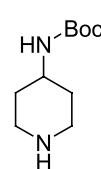
190072



541367



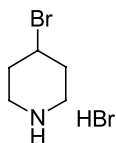
233026



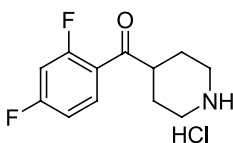
Cat. No.	Description	CAS
209475	3-Amino-2,6-dioxo-piperidine hydrochloride, 99%	24666-56-6
589565	(R)-3-Aminopiperidine, 98%	127294-73-9
347504	(R)-(-)-3-Aminopiperidine dihydrochloride, 98%	334618-23-4
197320	4-Amino-2,2,6,6-tetramethylpiperidine, 98%	36768-62-4
989088	4-(Boc-aminomethyl)piperidine, 97%	135632-53-0
190072	(R)-3-(Boc-amino)piperidine, 98%	309956-78-3
541367	(S)-3-(Boc-amino)piperidine, 98%	216854-23-8
233026	4-(Boc-amino)piperidine, 98%	73874-95-0

## Piperidines

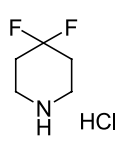
160707



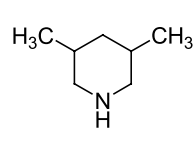
114355



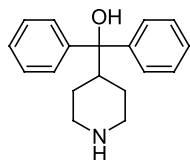
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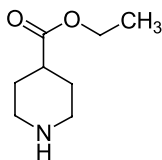
284652



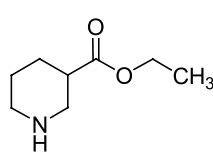
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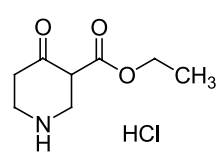
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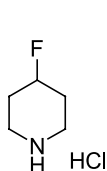
104114



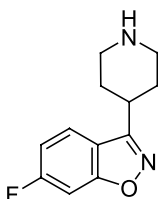
313418



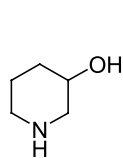
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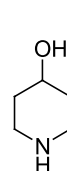
195312



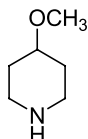
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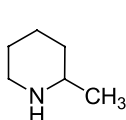
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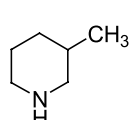
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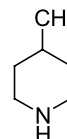
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133386

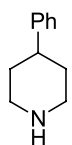


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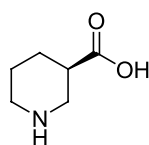


Cat. No.	Description	CAS
160707	4-Bromopiperidine hydrobromide, 98%	54288-70-9
114355	4-(2,4-Difluorobenzoyl)piperidine hydrochloride, 99.5%	106266-04-0
402370	4,4-Difluoropiperidine hydrochloride, 97%	144230-52-4
284652	3,5-Dimethylpiperidine, 99%	35794-11-7
159262	$\alpha,\alpha$ -Diphenyl-4-piperidinomethanol, 98%	115-46-8
106356	Ethyl isonipecotate, 97%	1126-09-6
104114	Ethyl nipecotate, 98%	5006-62-2
313418	Ethyl 4-piperidone-3-carboxylate hydrochloride, 98%	4644-61-5
621730	4-Fluoropiperidine hydrochloride, 98%	57395-89-8
195312	6-Fluoro-3-(4-piperidinyl)-1,2-benzisoxazole, 98%	84163-77-9
211528	3-Hydroxypiperidine, 98%	6859-99-0
210263	4-Hydroxypiperidine, 99%	5382-16-1
125650	4-Methoxypiperidine, 98%	4045-24-3
278681	2-Methylpiperidine, 99%	109-05-7
133386	3-Methylpiperidine, 99%	626-56-2
215690	4-Methylpiperidine, 99%	626-58-4

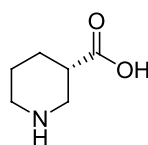
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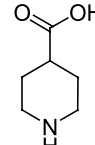
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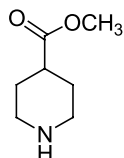
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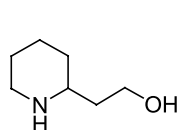
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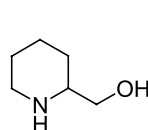
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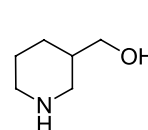
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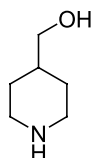
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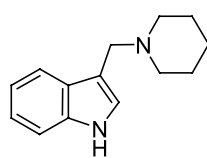
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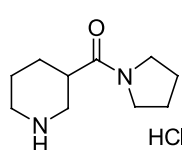
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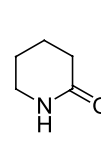
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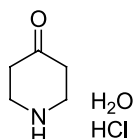
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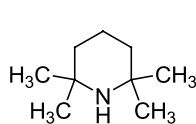
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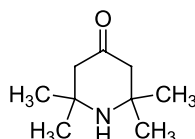
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178802



499014



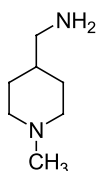
Cat. No.	Description	CAS
156769	4-Phenylpiperidine, 97%	771-99-3
441613	(R)-(-)-3-Piperidinecarboxylic acid, 98%	25137-00-2
385885	(S)-(+)-3-Piperidinecarboxylic acid, 98%	59045-82-8
284826	4-Piperidinecarboxylic acid, 98%	498-94-2
437270	4-Piperidinecarboxylic acid methyl ester, 99%	2971-79-1
135049	2-Piperidineethanol, 98%	1484-84-0
208641	2-Piperidinemethanol, 98%	3433-37-2
158067	3-Piperidinemethanol, 96%	4606-65-9
128602	4-Piperidinemethanol, 98%	6457-49-4
282370	3-((Piperidin-1-yl)methyl)-1H-indole, 98%	5355-42-0
959966	(3-Piperidinyl)(1-pyrrolidinyl)methanone hydrochloride, 97%	937724-81-7
178189	2-Piperidone, 98%	675-20-7
190760	4-Piperidone monohydrate hydrochloride, 98%	40064-34-4
178802	2,2,6,6-Tetramethylpiperidine, 98%	768-66-1
499014	2,2,6,6-Tetramethyl-4-piperidone, 99%	826-36-8



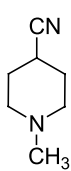
# Piperidines

## ■ N-Me-Piperidines

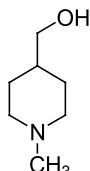
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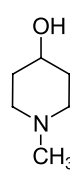
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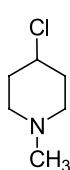
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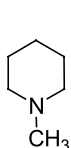
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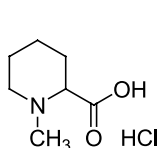
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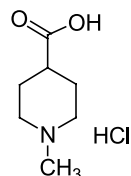
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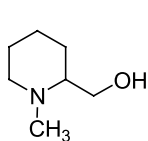
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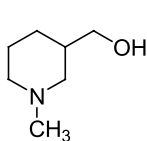
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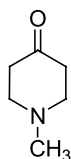
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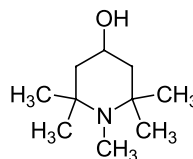
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197598

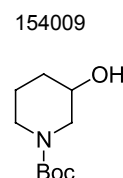
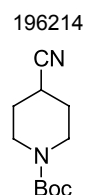
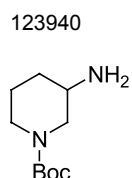
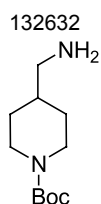
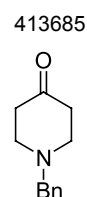
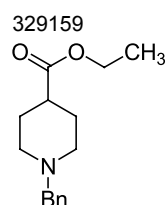
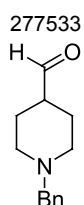
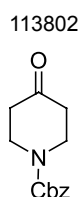
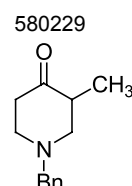
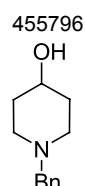
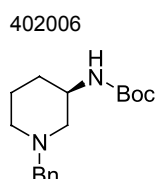
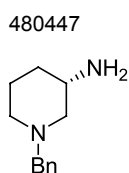
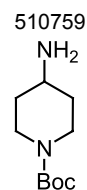
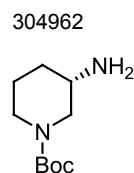
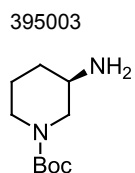
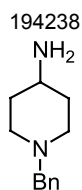


566694



Cat. No.	Description	CAS
566142	4-(Aminomethyl)-1-methylpiperidine, 97%	7149-42-0
320002	4-Cyano-1-methyl-piperidine, 97%	20691-92-3
308769	4-Hydroxymethyl-1-methylpiperidine, 98%	20691-89-8
253734	4-Hydroxy-N-methylpiperidine, 98%	106-52-5
209371	N-Methyl-4-chloropiperidine, 98%	5570-77-4
135487	N-Methylpiperidine, 99%	626-67-5
215008	1-Methylpiperidine-2-carboxylic acid hydrochloride, 98%	25271-35-6
118455	1-Methylpiperidine-4-carboxylic acid hydrochloride, 98%	71985-80-3
266982	1-Methyl-2-piperidinemethanol, 97%	20845-34-5
494034	1-Methyl-3-piperidinemethanol, 97%	7583-53-1
197598	N-Methyl-4-piperidone, 98%	1445-73-4
566694	1,2,2,6,6-Pentamethyl-4-piperidinol, 99%	2403-89-6

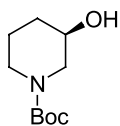
## ■ N-Protecting group-Piperidines



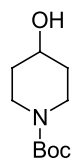
Cat. No.	Description	CAS
194238	4-Amino-1-benzylpiperidine, 98%	50541-93-0
395003	(R)-(-)-3-Amino-1-Boc-piperidine, 98%	188111-79-7
304962	(S)-(+)-3-Amino-1-Boc-piperidine, 98%	625471-18-3
510759	4-Amino-1-Boc-piperidine, 98%	87120-72-7
480447	(S)-1-Benzyl-3-aminopiperidine, 98%, ee: 98%	168466-85-1
402006	(R)-1-Benzyl-3-N-Boc-aminopiperidine, 98%	454713-13-4
455796	N-Benzyl-4-hydroxypiperidine, 98%	4727-72-4
580229	1-Benzyl-3-methyl-4-piperidone, 99%	34737-89-8
113802	N-Benzyloxycarbonyl-4-piperidone, 98%	19099-93-5
277533	N-Benzylpiperidine-4-carboxaldehyde, 97%	22065-85-6
329159	1-Benzyl-piperidine-4-carboxylic acid ethyl ester, 98%	24228-40-8
413685	1-Benzyl-4-piperidone, 99%	3612-20-2
132632	1-Boc-4-(aminomethyl)piperidine, 97%	144222-22-0
123940	1-Boc-3-aminopiperidine, 98%	184637-48-7
196214	N-Boc-4-cyano-piperidine, 98%	91419-52-2
154009	1-Boc-3-hydroxypiperidine, 98%	85275-45-2

## Piperidines

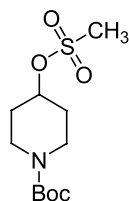
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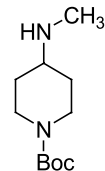
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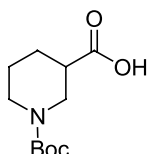
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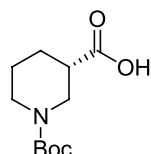
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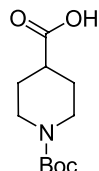
427134



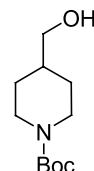
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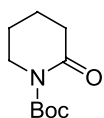
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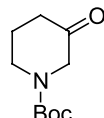
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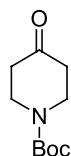
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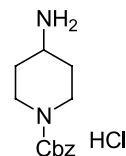
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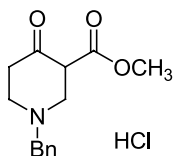
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1664427

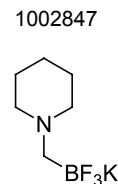
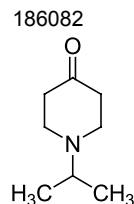
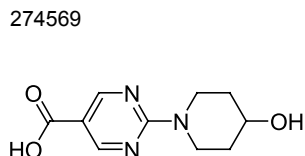
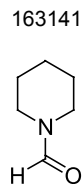
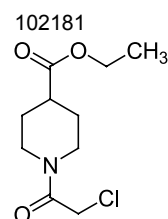
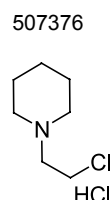
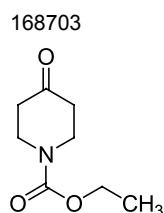
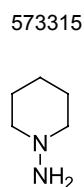
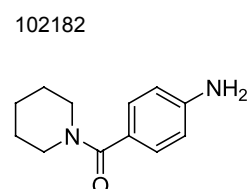
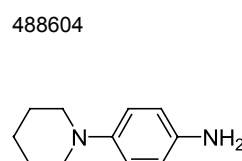
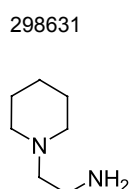
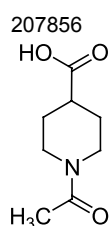


134364



Cat. No.	Description	CAS
131983	(R)-1-Boc-3-hydroxypiperidine, 97%	143900-43-0
468181	1-Boc-4-hydroxypiperidine, 98%	109384-19-2
479869	1-Boc-4-methanesulfonyloxy-piperidine, 97%	141699-59-4
362512	1-Boc-4-methylaminopiperidine, 98%	147539-41-1
427134	1-Boc-3-piperidinecarboxylic acid, 98%	84358-12-3
375504	(S)-1-Boc-piperidine-3-carboxylic acid, 97%	88495-54-9
336832	1-Boc-4-piperidinecarboxylic acid, 98%	84358-13-4
100275	N-Boc-4-piperidinemethanol, 97%	123855-51-6
347019	1-Boc-2-piperidone, 98%	85908-96-9
528308	1-Boc-3-piperidone, 97%	98977-36-7
228525	1-Boc-4-piperidone, 98%	79099-07-3
1664427	N-Cbz-4-aminopiperidine hydrochloride, 98%	1159826-41-1
134364	Methyl 1-benzyl-4-oxo-3-piperidinecarboxylate hydrochloride, 95%	3939-01-3

## ■ Other N-Substituted Piperidines

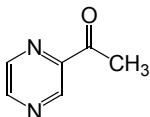


Cat. No.	Description	CAS
207856	1-Acetyl-4-piperidylcarboxylic acid, 98%	25503-90-6
298631	1-(2-Aminoethyl)piperidine, 98%	27578-60-5
488604	N-(4-Aminophenyl)piperidine, 97%	2359-60-6
102182	(4-Amino-phenyl)-piperidin-1-yl-methanone, 97%	42837-37-6
573315	1-Aminopiperidine, 99%	2213-43-6
168703	N-Carboethoxy-4-piperidone, 99%	29976-53-2
507376	1-(2-Chloroethyl)piperidine hydrochloride, 98%	2008-75-5
102181	Ethyl 1-(2-chloroacetyl)-4-piperidylcarboxylate, 97%	318280-71-6
163141	1-Formylpiperidine, 99%	2591-86-8
274569	2-(4-Hydroxypiperidin-1-yl)pyrimidine-5-carboxylic acid, 97%	1116339-69-5
186082	1-(1'-Methylethyl)-4-piperidone, 97%	5355-68-0
1002847	Potassium (piperidin-1-yl)methyltrifluoroborate, 95%	888711-54-4

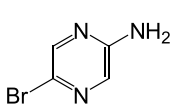
# Pyrazines

Derivatives of pyrazine are very useful in the pharmaceutical, food, flavor and fragrance industries. For instance, phenazine is well known for its antitumor, antibiotic and diuretic activities. Tetramethylpyrazine has been reported to scavenge superoxide anions and decrease production of nitric oxide in human polymorphonuclear leukocytes.

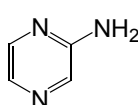
299509



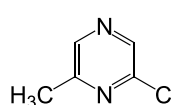
551502



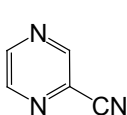
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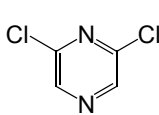
337947



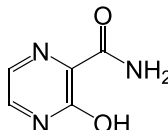
400915



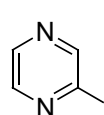
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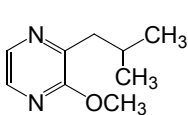
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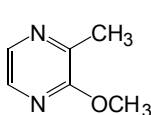
474013



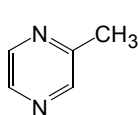
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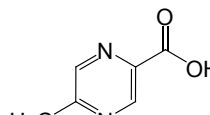
284336



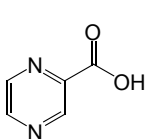
237300



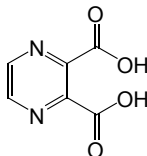
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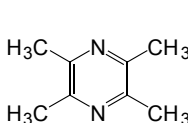
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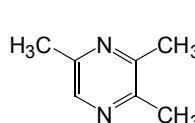
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210926



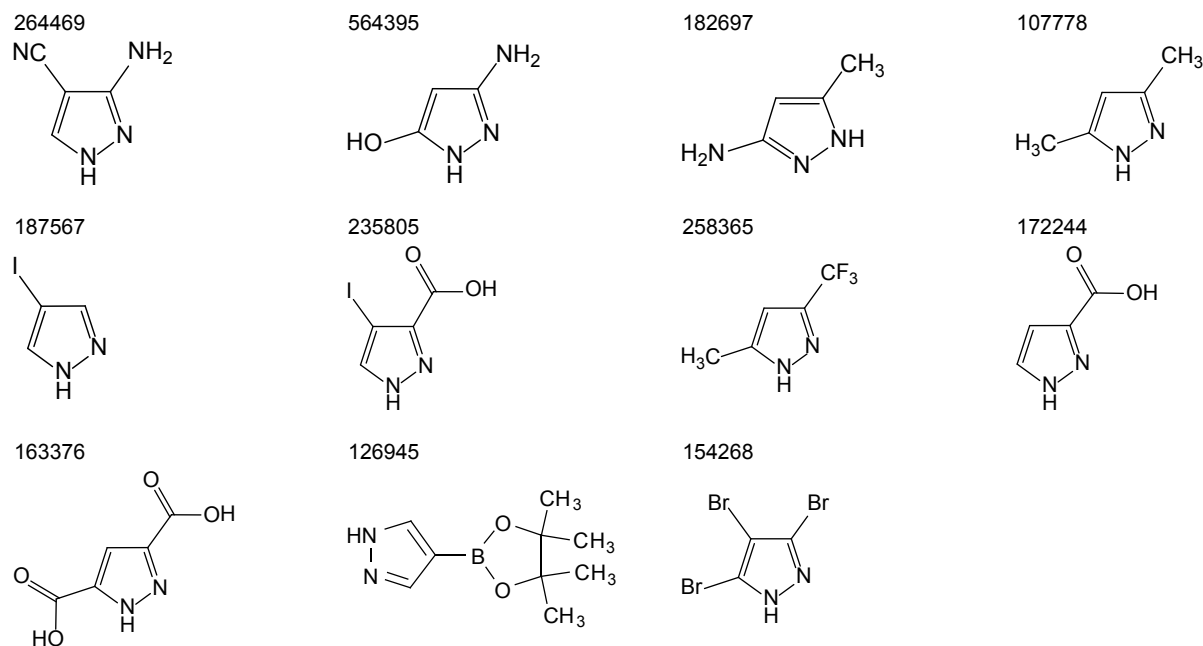
166143



Cat. No.	Description	CAS
299509	2-Acetylpyrazine, 99%	22047-25-2
551502	2-Amino-5-bromopyrazine, 95%	59489-71-3
204851	2-Aminopyrazine, 99%	5049-61-6
337947	2-Chloro-6-methylpyrazine, 98%	38557-71-0
400915	2-Cyanopyrazine, 99%	19847-12-2
509464	2,6-Dichloropyrazine, 99%	4774-14-5
594076	3-Hydroxypyrazine-2-carboxamide, 97%	55321-99-8
474013	Iodopyrazine, 95%	32111-21-0
170369	2-Isobutyl-3-methoxypyrazine, 99%	24683-00-9
284336	2-Methoxy-3-methylpyrazine, 98%	2847-30-5
237300	2-Methylpyrazine, 98%	109-08-0
195054	5-Methylpyrazine-2-carboxylic acid, 98%	5521-55-1
207194	2-Pyrazinecarboxylic acid, 99%	98-97-5
344605	2,3-Pyrazinedicarboxylic acid, 98%	89-01-0
210926	2,3,5,6-Tetramethylpyrazine, 98%	1124-11-4
166143	2,3,5-Trimethylpyrazine, 98%	14667-55-1

Pyrazole is a bioactive compound composed of a five-membered ring with two nitrogen atoms at adjacent positions. This scaffold forms the core in a wide variety of leading drugs including Celebrex, Viagra and Rimobant. The Pyrazoles can also be used as bi-functional ligands for metal catalysis and building blocks for synthesis.

## ■ N-Unsubstituted Monocyclic Pyrazoles

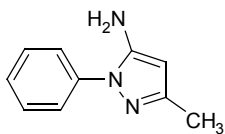


Cat. No.	Description	CAS
264469	3-Amino-4-cyanopyrazole, 98%	16617-46-2
564395	3-Amino-5-hydroxypyrazole, 98%	6126-22-3
182697	3-Amino-5-methylpyrazole, 97%	31230-17-8
107778	3,5-Dimethylpyrazole, 99%	67-51-6
187567	4-Iodopyrazole, 98%	3469-69-0
235805	4-Iodo-1H-pyrazole-3-carboxylic acid, 97%	6647-93-4
258365	3-Methyl-5-trifluoromethyl-1H-pyrazole, 97%	10010-93-2
172244	1H-Pyrazole-3-carboxylic acid, 98%	1621-91-6
163376	3,5-Pyrazoledicarboxylic acid, 98%	3112-31-0
126945	4-(4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)-1H-pyrazole, 97%	269410-08-4
154268	3,4,5-Tribromopyrazole, 97%	17635-44-8

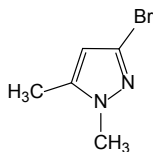
# Pyrazoles

## ■ N-Substituted Monocyclic Pyrazoles

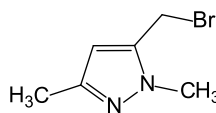
197232



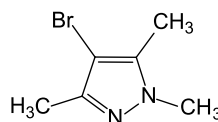
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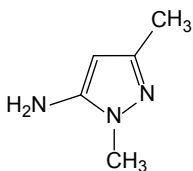
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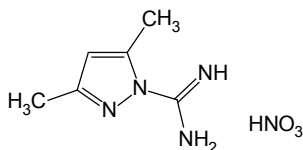
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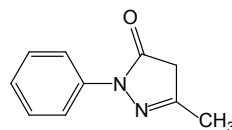
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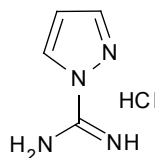
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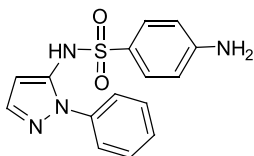
343352



259087



178125



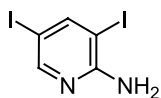
Cat. No.	Description	CAS
197232	5-Amino-3-methyl-1-phenylpyrazole, 98%	1131-18-6
212821	3-Bromo-1,5-dimethyl-1H-pyrazole, 97%	5744-80-9
282793	5-Bromomethyl-1,3-dimethyl-1H-pyrazole, 97%	873191-23-2
109489	4-Bromo-1,3,5-trimethyl-1H-pyrazole, 98%	15801-69-1
100155	1,3-Dimethyl-1H-pyrazole-5-amine, 97%	3524-32-1
198118	3,5-Dimethyl-1-pyrazolylformamidinium nitrate, 97%	38184-47-3
343352	3-Methyl-1-phenyl-2-pyrazolin-5-one, 98%	89-25-8
259087	1H-Pyrazole-1-carboximidine hydrochloride, 99%	4023-02-3
178125	Sulfaphenazole, 99%	526-08-9

Pyridine is noted for its aromatic and alkaline properties resulting from its six-membered ring containing a single nitrogen atom. Its derivatives exhibit various types of biological activities such as antibacterial, antitumor and cytotoxic activity.

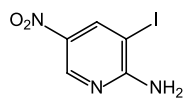
Many pyridines have been applied in medicinal drugs and agricultural products such as herbicides, insecticides, fungicides, and plant growth regulators. They have also been used as pyridine-containing monomers with unique physical properties and functions.

## ■ Halogenated Pyridines

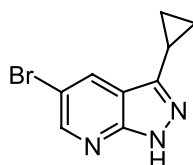
258332



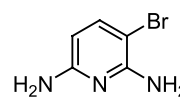
609047



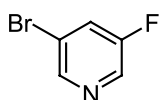
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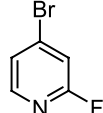
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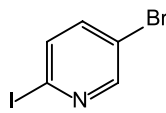
195059



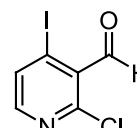
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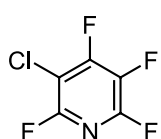
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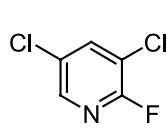
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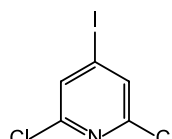
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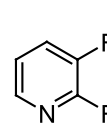
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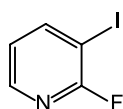
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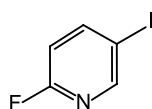
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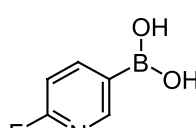
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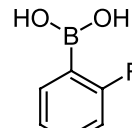
118948



112904



232003

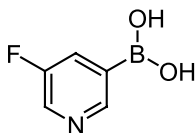


Cat. No.	Description	CAS
258332	2-Amino-3,5-diiodopyridine, 97%	23597-15-1
609047	2-Amino-3-iodo-5-nitropyridine, 97%	25391-56-4
1761500	5-Bromo-3-cyclopropyl-1H-pyrazolo [3,4-b]pyridine, 95%	1211537-03-9
132546	3-Bromo-2,6-diaminopyridine, 95%	54903-86-5
195059	3-Bromo-5-fluoropyridine, 98%	407-20-5
132754	4-Bromo-2-fluoropyridine, 98%	128071-98-7
114071	5-Bromo-2-iodopyridine, 98%	223463-13-6
241405	2-Chloro-4-iodo-pyridine-3-carbaldehyde, 97%	153034-90-3
270714	3-Chloro-2,4,5,6-tetrafluoropyridine, 98%	1735-84-8
103092	3,5-Dichloro-2-fluoropyridine, 98%	823-56-3
620247	2,6-Dichloro-4-iodopyridine, 97%	98027-84-0
931980	2,3-Difluoropyridine, 98%	1513-66-2
265940	2-Fluoro-3-iodopyridine, 98%	113975-22-7
118948	2-Fluoro-5-iodopyridine, 97%	171197-80-1
112904	2-Fluoropyridine-5-boronic acid, 98%	351019-18-6
232003	3-Fluoropyridine-4-boronic acid, 98%	458532-97-3

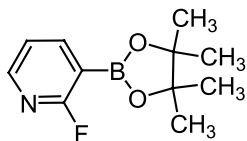


# Pyridines

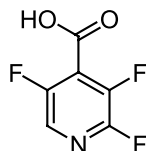
484952



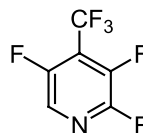
262677



622124



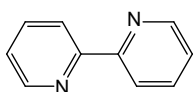
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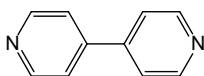
Cat. No.	Description	CAS
484952	5-Fluoropyridine-3-boronic acid, 98%	872041-86-6
262677	2-Fluoropyridine-3-boronic acid pinacol ester, 98%	452972-14-4
622124	2,3,5-Trifluoropyridine-4-carboxylic acid, 97%	675602-91-2
544040	2,3,5-Trifluoro-4-(trifluoromethyl)pyridine, 97%	675602-93-4

## ■ Bipyridine & Terpyridine Ligands

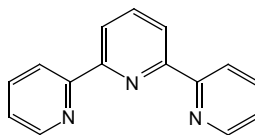
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297602



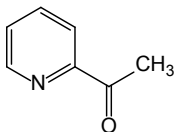
500947



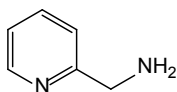
Cat. No.	Description	CAS
107095	2,2'-Bipyridine, 99%	366-18-7
297602	4,4'-Dipyridyl, 99%	553-26-4
500947	2,2':6',2''-Terpyridine, 98%	1148-79-4

## ■ Other

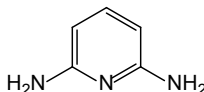
129876



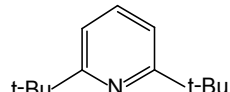
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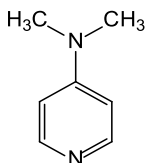
265143



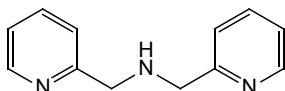
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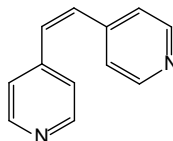
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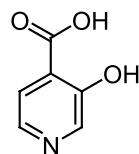
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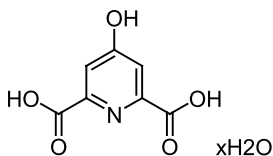
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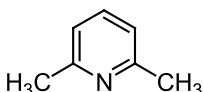
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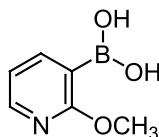
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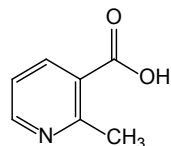
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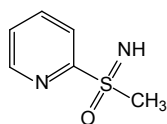
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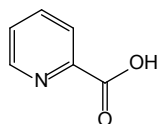
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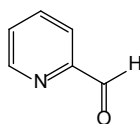
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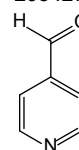
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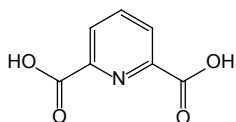
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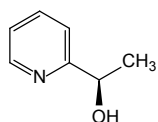
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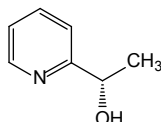
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272429



248186



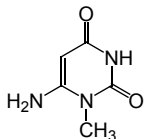
Cat. No.	Description	CAS
129876	2-Acetylpyridine, 98%	1122-62-9
228313	2-(Aminomethyl)pyridine, 99%	3731-51-9
265143	2,6-Diaminopyridine, 99%	141-86-6
351269	2,6-Di-tert-butylpyridine, 96%	585-48-8
117147	4-Dimethylaminopyridine, 99%	1122-58-3
123777	Di(2-picolyl)amine, 95%	1539-42-0
226692	1,2-Di(4-pyridyl)ethylene, 98%	13362-78-2
138018	3-Hydroxypyridine-4-carboxylic acid, 97%	10128-71-9
198809	4-Hydroxypyridine-2,6-dicarboxylic acid hydrate, 97%	138-60-3
291976	2,6-Lutidine, 99%	108-48-5
273966	2-Methoxypyridine-3-boronic acid, 98%	163105-90-6
522333	2-Methylnicotinic acid, 98%	3222-56-8
284133	S-Methyl-S-(2-pyridinyl) sulfoximine, 90%	76456-06-9
109226	2-Picolinic acid, 99%	98-98-6
147015	2-Pyridinecarboxaldehyde, 98%	1121-60-4
295427	4-Pyridinecarboxaldehyde, 98%	872-85-5
113992	2,6-Pyridinedicarboxylic acid, 99%	499-83-2
272429	(R)-1-(Pyridin-2-yl)ethanol, 97.5%, ee: 95%	27911-63-3
248186	(S)-1-(Pyridin-2-yl)ethanol, 98%	59042-90-9

# Pyrimidines

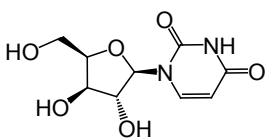
Pyrimidine moiety is the basic structural unit of the nucleotide in DNA and RNA. Pyrimidine derivatives are widely used as building blocks for the preparation of pharmaceuticals, agrochemicals and photoelectric materials.

## ■ Uracils

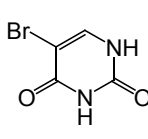
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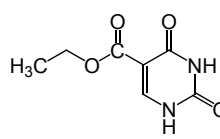
259777



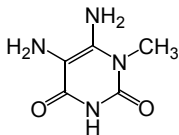
222172



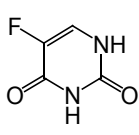
270578



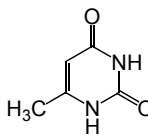
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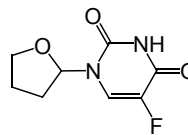
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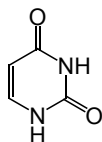
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515848



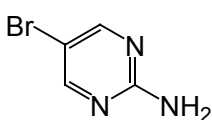
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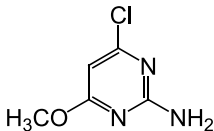
Cat. No.	Description	CAS
117503	6-Amino-1-methyluracil, 97%	2434-53-9
259777	1-(β-D-Arabinofuranosyl)uracil, 98%	3083-77-0
222172	5-Bromouracil, 98%	51-20-7
270578	5-Carboethoxyuracil, 98%	28485-17-8
485631	5,6-Diamino-1-methyluracil, 97%	6972-82-3
180939	5-Flourouracil, 99%	51-21-8
120611	6-Methyluracil, 98%	626-48-2
515848	1-(2-Tetrahydroformyl)-5-flourouracil, 98%	17902-23-7
248225	Uracil, 98%	66-22-8

## ■ Monocyclic Pyrimidines

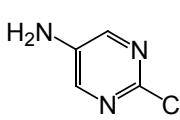
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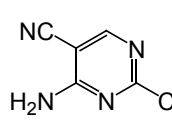
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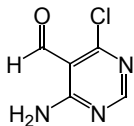
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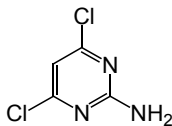
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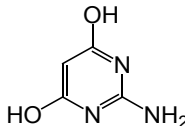
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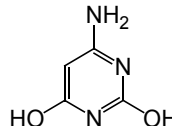
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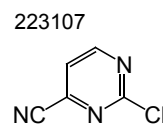
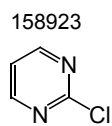
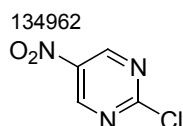
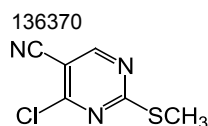
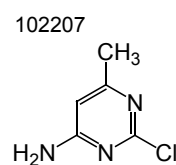
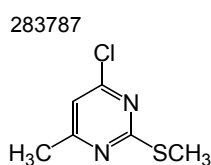
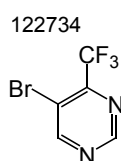
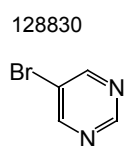
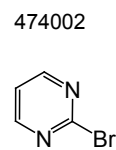
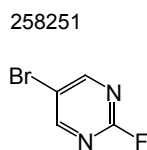
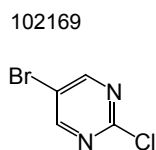
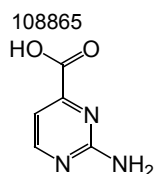
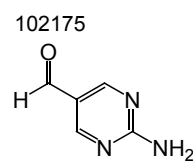
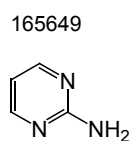
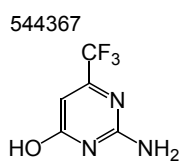
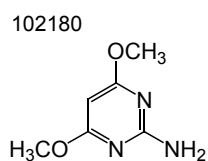


415605



102168

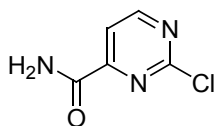




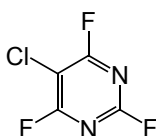
Cat. No.	Description	CAS
124903	2-Amino-5-bromopyrimidine, 98%	7752-82-1
298315	2-Amino-4-chloro-6-methoxypyrimidine, 98%	5734-64-5
243800	5-Amino-2-chloropyrimidine, 97%	56621-90-0
225087	4-Amino-2-chloropyrimidine-5-carbonitrile, 97%	94741-69-2
214024	4-Amino-6-chloropyrimidine-5-carboxaldehyde, 96%	14160-93-1
120815	2-Amino-4,6-dichloropyrimidine, 97%	56-05-3
415605	2-Amino-4,6-dihydropyrimidine, 98%	56-09-7
102168	4-Amino-2,6-dihydropyrimidine, 97%	873-83-6
102180	2-Amino-4,6-dimethoxypyrimidine, 97%	36315-01-2
544367	2-Amino-4-hydroxy-6-(trifluoromethyl) pyrimidine, 97%	1513-69-5
165649	2-Aminopyrimidine, 99%	109-12-6
102175	2-Aminopyrimidine-5-carbaldehyde, 97%	120747-84-4
108865	2-Aminopyrimidine-4-carboxylic acid, 97%	2164-65-0
102169	5-Bromo-2-chloropyrimidine, 98%	32779-36-5
258251	5-Bromo-2-fluoropyrimidine, 97%	62802-38-4
474002	2-Bromopyrimidine, 98%	4595-60-2
128830	5-Bromopyrimidine, 98%	4595-59-9
122734	5-Bromo-4-(trifluoromethyl)pyrimidine, 97%	785777-88-0
283787	4-Chloro-6-methyl-2-(methylthio)pyrimidine, 97%	17119-73-2
102207	2-Chloro-6-methylpyrimidin-4-yl-amine, 97%	14394-60-6
136370	4-Chloro-2-(methylthio)pyrimidine-5-carbonitrile, 97%	33089-15-5
134962	2-Chloro-5-nitropyrimidine, 98%	10320-42-0
158923	2-Chloropyrimidine, 98%	1722-12-9
223107	2-Chloropyrimidine-4-carbonitrile, 97%	75833-38-4

# Pyrimidines

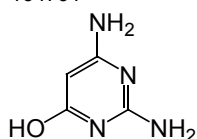
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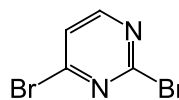
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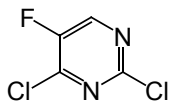
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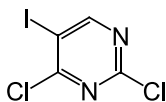
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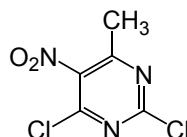
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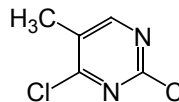
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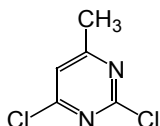
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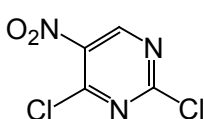
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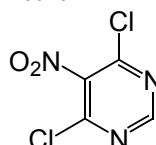
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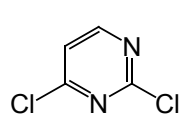
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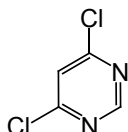
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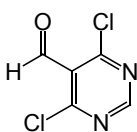
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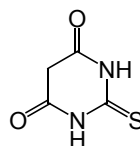
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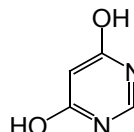
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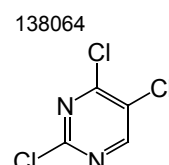
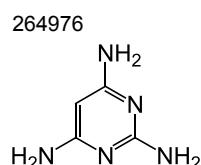
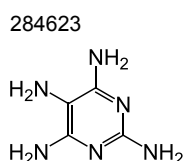
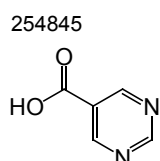
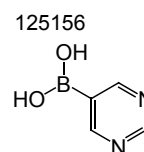
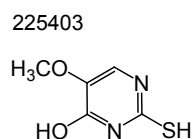
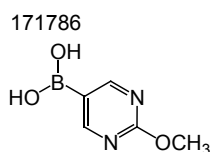
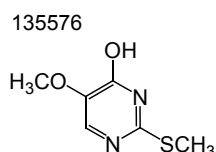
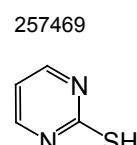
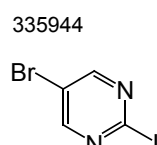
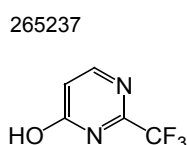
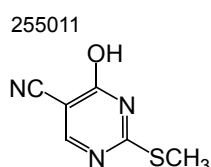
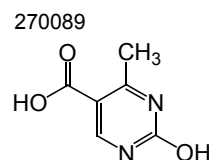
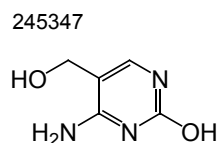
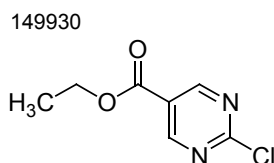
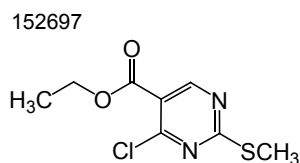
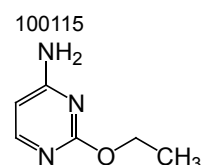
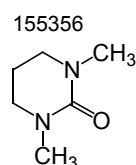
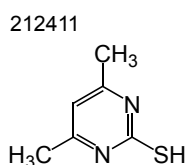
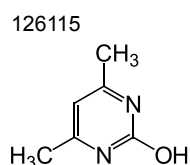
296192



156043



Cat. No.	Description	CAS
101205	2-Chloropyrimidine-4-carboxamide, 97%	22536-66-9
118891	5-Chloro-2,4,6-trifluoropyrimidine, 98%	697-83-6
164791	2,4-Diamino-6-hydroxypyrimidine, 98%	56-06-4
235319	2,4-Dibromopyrimidine, 97%	3921-01-5
135127	2,4-Dichloro-5-fluoropyrimidine, 98%	2927-71-1
972036	2,4-Dichloro-5-iodopyrimidine, 98%	13544-44-0
217073	2,4-Dichloro-6-methyl-5-nitropyrimidine, 98%	13162-26-0
107307	2,4-Dichloro-5-methylpyrimidine, 98%	1780-31-0
259644	2,4-Dichloro-6-methylpyrimidine, 99%	5424-21-5
247434	2,4-Dichloro-5-nitropyrimidine, 97%	49845-33-2
159234	4,6-Dichloro-5-nitropyrimidine, 98%	4316-93-2
109149	2,4-Dichloropyrimidine, 97%	3934-20-1
102092	4,6-Dichloropyrimidine, 98%	1193-21-1
110173	4,6-Dichloro-5-pyrimidinecarbaldehyde, 96%	5305-40-8
296192	4,6-Dihydroxy-2-mercaptopyrimidine, 98%	504-17-6
156043	4,6-Dihydroxypyrimidine, 98.5%	1193-24-4

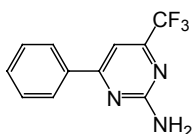


Cat. No.	Description	CAS
126115	4,6-Dimethyl-2-hydroxypyrimidine, 98%	108-79-2
212411	4,6-Dimethyl-2-pyrimidinethiol, 97%	22325-27-5
155356	1,3-Dimethyl-3,4,5,6-tetrahydro-2(1H)-pyrimidinone, 99%	7226-23-5
100115	2-Ethoxypyrimidin-4-ylamine, 97%	3289-48-3
152697	Ethyl 4-chloro-2-methylthio-5-pyrimidinecarboxylate, 97%	5909-24-0
149930	Ethyl 2-chloropyrimidine-5-carboxylate, 97%	89793-12-4
245347	2-Hydroxy-4-amino-5-(hydroxymethyl) pyrimidine, 95%	1123-95-1
270089	2-Hydroxy-4-methylpyrimidine-5-carboxylic acid, 97%	13008-17-8
255011	4-Hydroxy-2-(methylthio)pyrimidine-5-carbonitrile, 97%	89487-99-0
265237	4-Hydroxy-2-(trifluoromethyl)pyrimidine, 97%	1546-80-1
335944	2-Iodo-5-bromopyrimidine, 98%	183438-24-6
257469	2-Mercaptopyrimidine, 97.5%	1450-85-7
135576	5-Methoxy-2-(methylthio)pyrimidin-4-ol, 97%	1671-08-5
171786	2-Methoxy-5-boronic acid, 98%	628692-15-9
225403	5-Methoxy-2-sulfanyl-4-pyrimidinol, 95%	6939-11-3
125156	Pyrimidine-5-boronic acid, 97%	109299-78-7
254845	Pyrimidine-5-carboxylic acid, 98%	4595-61-3
284623	2,4,5,6-Tetraaminopyrimidine, 97%	1004-74-6
264976	2,4,6-Triaminopyrimidine, 98%	1004-38-2
138064	2,4,5-Trichloropyrimidine, 98%	5750-76-5

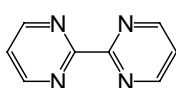
# Pyrimidines

## Polycyclic Pyrimidines

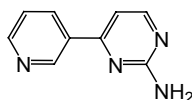
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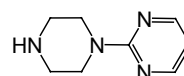
264465



264812



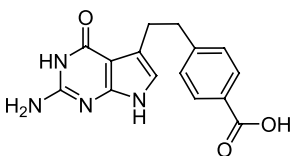
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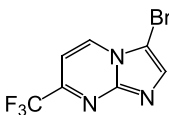
Cat. No.	Description	CAS
218363	2-Amino-4-phenyl-6-(trifluoromethyl)pyrimidine, 97%	26974-09-4
264465	2,2'-Bipyrimidyl, 97%	34671-83-5
264812	4-(3-Pyridinyl)-2-pyrimidine amine, 97%	66521-66-2
189608	1-(2-Pyrimidyl)piperazine, 99%	20980-22-7

## Condensed Cyclic Pyrimidines

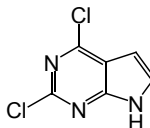
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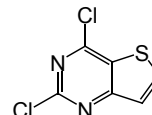
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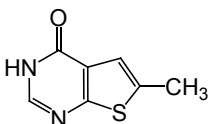
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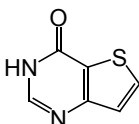
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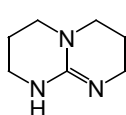
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554445



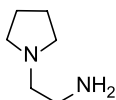
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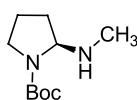
Cat. No.	Description	CAS
964333	4-[2-(2-Amino-4-oxo-4,7-dihydro-3H-pyrrolo[2,3-d]pyrimidin-5-yl)-ethyl]-benzoic acid, 99%	137281-39-1
102170	3-Bromo-7-(trifluoromethyl)imidazo[1,2-a]pyrimidine, 97%	375857-65-1
514562	2,4-Dichloro-7H-pyrrolo[2,3-d]pyrimidine, 95%	90213-66-4
187245	2,4-Dichlorothieno[3,2-d]pyrimidine, 97%	16234-14-3
182970	6-Methyl-3H-thieno[2,3-d]pyrimidin-4-one, 97%	108831-66-9
554445	Thieno[3,2-d]pyrimidin-4(3H)-one, 98%	16234-10-9
478441	1,5,7-Triazabicyclo[4.4.0]dec-5-ene, 98%	5807-14-7

Pyrrolidine, also known as tetrahydropyrrole, is a cyclic secondary amine, also classified as a saturated heterocycle. Pyrrolidine was found in the leaves of tobacco and carrot. The pyrrolidine ring structure is present in numerous natural alkaloids such as nicotine and hygrine. It can be found in many pharmaceutical drugs especially in nervous system drugs (e.g. Tavist, Relpax). The amino acids proline and hydroxyproline are, in a structural sense, derivatives of pyrrolidine.

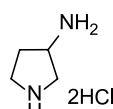
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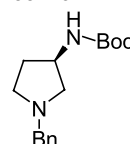
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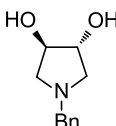
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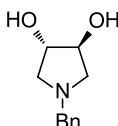
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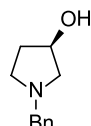
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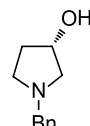
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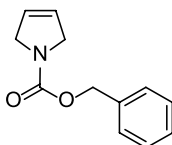
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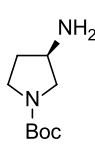
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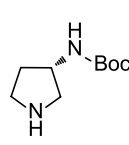
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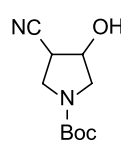
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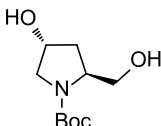
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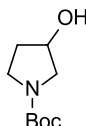
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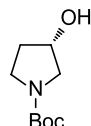
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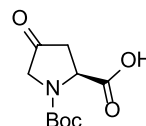
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270814



190823

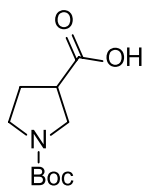


Cat. No.	Description	CAS
286728	N-(2-Aminoethyl)pyrrolidine, 99%	7154-73-6
208790	(S)-(2-Aminomethyl)-1-N-Boc-pyrrolidine, 98%	119020-01-8
143745	3-Aminopyrrolidine dihydrochloride, 98%	103831-11-4
531202	(R)-(+)-1-Benzyl-3-(Boc-amino)pyrrolidine, 97%	131878-23-4
570649	(3R,4R)-(-)-1-Benzyl-3,4-pyrrolidindiol, 97%	163439-82-5
211875	(3S,4S)-(+)-1-Benzyl-3,4-pyrrolidindiol, 97%	90365-74-5
217796	(R)-(+)-1-Benzyl-3-pyrrolidinol, 98%	101930-07-8
417556	(S)-(-)-1-Benzyl-3-pyrrolidinol, 99%, ee: 99%	101385-90-4
620785	Benzyl 3-pyrroline-1-carboxylate, 90%	31970-04-4
401864	(R)-(+)-1-Boc-3-aminopyrrolidine, 97%, ee: 98%	147081-49-0
244064	(S)-3-(Boc-amino)pyrrolidine, 98%	122536-76-9
248511	N-Boc-3-cyano-4-hydroxypyrrrolidine, 97%	197143-33-2
113186	Boc-trans-4-hydroxy-L-prolinol, 98%	61478-26-0
270815	1-Boc-3-hydroxypyrrrolidine, 98%	103057-44-9
270814	(S)-N-Boc-3-hydroxypyrrrolidine, 99%, ee: 98%	101469-92-5
190823	N-Boc-4-oxo-L-proline, 98%	84348-37-8

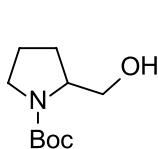


## Pyrrolidines

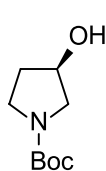
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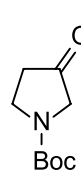
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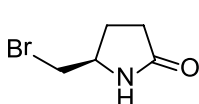
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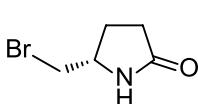
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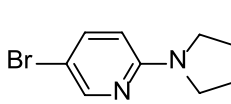
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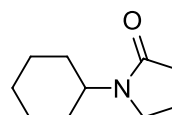
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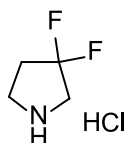
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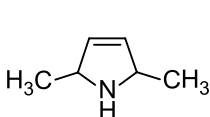
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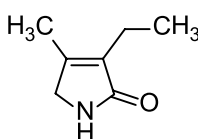
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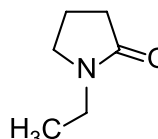
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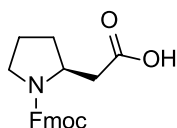
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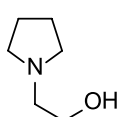
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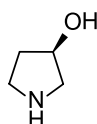
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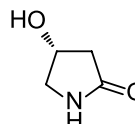
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142570

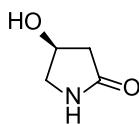


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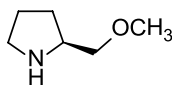


Cat. No.	Description	CAS
278833	1-Boc-pyrrolidine-3-carboxylic acid, 97%	59378-75-5
1231512	1-Boc-pyrrolidine-2-methanol, 98%	170491-63-1
270813	(R)-(-)-N-Boc-3-pyrrolidinol, 98%, ee: 98%	109431-87-0
267097	N-Boc-3-pyrrolidinone, 98%	101385-93-7
148791	(R)-(-)-5-Bromomethyl-2-pyrrolidinone, 97%	98612-60-3
376587	(S)-(+)-5-Bromomethyl-2-pyrrolidinone, 97%	72479-05-1
216426	5-Bromo-2-(pyrrolidin-1-yl)pyridine, 97%	210963-93-2
585393	1-Cyclohexyl-2-pyrrolidinone, 99%	6837-24-7
529128	3,3-Difluoropyrrolidine hydrochloride, 98%	163457-23-6
187958	2,5-Dimethyl-3-pyrroline, 75%, mixture of cis and trans	59480-92-1
585015	3-Ethyl-4-methyl-3-pyrrolin-2-one, 99%	766-36-9
115014	1-Ethyl-2-pyrrolidinone, 98%	2687-91-4
570813	N-Fmoc-L-β-homoproline, 99%	193693-60-6
181665	1-(2-Hydroxyethyl)pyrrolidine, 98%	2955-88-6
142570	(R)-3-(+)-Hydroxypyrrrolidine, 98%	2799-21-5
541366	(R)-(+)-4-Hydroxy-2-pyrrolidinone, 97%	22677-21-0

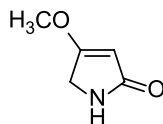
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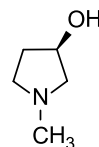
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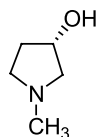
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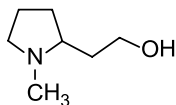
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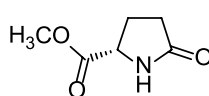
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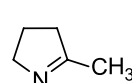
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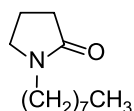
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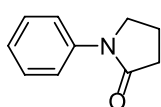
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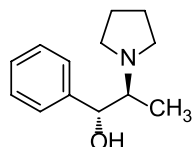
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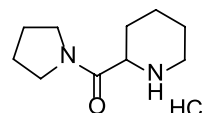
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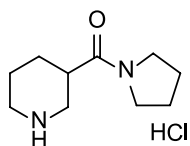
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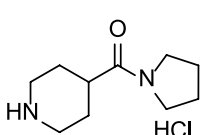
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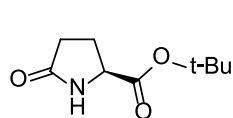
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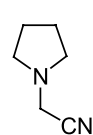
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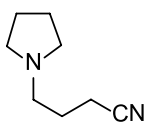
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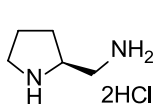
Cat. No.	Description	CAS
588375	(S)-(-)-4-Hydroxy-2-pyrrolidinone, 98%	68108-18-9
131046	(S)-(+)-2-(Methoxymethyl)pyrrolidine, 98.5%	63126-47-6
431039	4-Methoxy-3-pyrrolin-2-one, 99%	69778-83-2
105379	(R)-(-)-1-Methyl-3-hydroxypyrrolidine, 99%	104641-60-3
538071	(S)-(+)-1-Methyl-3-hydroxypyrrolidine, 98%	104641-59-0
544976	1-Methyl-2-pyrrolidineethanol, 98%	67004-64-2
297836	Methyl (S)-(+)-2-pyrrolidone-5-carboxylate, 98%	4931-66-2
103842	2-Methyl-1-pyrroline, 98%	872-32-2
475746	1-Octyl-2-pyrrolidone, 99%	2687-94-7
504776	1-Phenyl-2-pyrrolidinone, 99%	4641-57-0
105500	(1R,2S)-1-Phenyl-2-(1-pyrrolidinyl)-1-propanol, 98%	127641-25-2
239256	(2-Piperidyl)(1-pyrrolidinyl)methanone hydrochloride, 97%	690634-81-2
959966	(3-Piperidyl)(1-pyrrolidinyl)methanone hydrochloride, 97%	937724-81-7
959995	(4-Piperidyl)(1-pyrrolidinyl)methanone hydrochloride, 97%	188979-07-9
1359134	L-Pyroglutamic acid tert-butyl ester, 98%	35418-16-7
312021	1-Pyrrolidineacetonitrile, 97%	29134-29-0

# Pyrrolidines

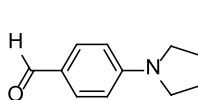
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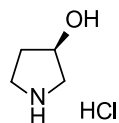
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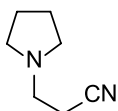
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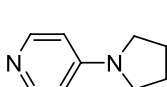
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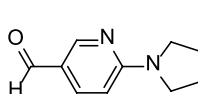
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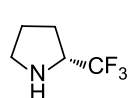
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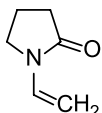
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961432



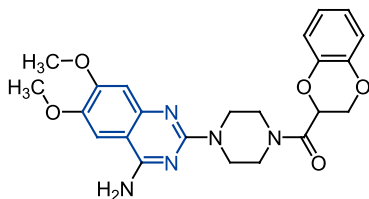
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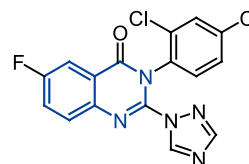
Cat. No.	Description	CAS
420154	1-Pyrrolidinebutanenitrile, 97%	35543-25-0
1482274	(S)-Pyrrolidine-2-methanamine dihydrochloride, 98%	103382-84-9
118912	4-(1-Pyrrolidino)benzaldehyde, 97%	51980-54-2
132447	(R)-(-)-3-Pyrrolidinol hydrochloride, 97%	104706-47-0
190517	3-(1-Pyrrolidino)propionitrile, 97%	26165-45-7
343662	4-Pyrrolidinopyridine, 99%	2456-81-7
248723	6-(1-Pyrrolidinyl)nicotinaldehyde, 97%	261715-39-3
961432	(R)-(-)-2-(Trifluoromethyl)pyrrolidine, 95%	119618-29-0
177747	1-Vinyl-2-pyrrolidinone, 99%, stabilized with MEHQ	88-12-0

Quinazoline is a heterocyclic compound composed of two fused six-membered aromatic rings: a benzene ring and a pyrimidine ring.

Quinazoline and its derivatives have been receiving more and more attention in the fields of pesticides and medicine due to their unique biological activities. Many quinazoline derivatives have been developed into commodities. For example, Fluquinconazole is used as a bactericide and Cardura is for the treatment of high blood pressure.

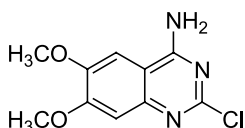


Cardura

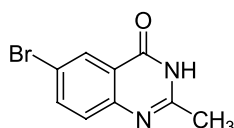


Fluquinconazole

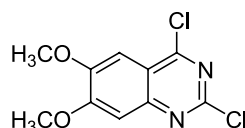
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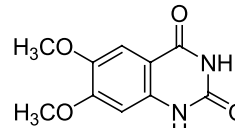
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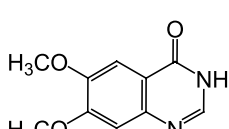
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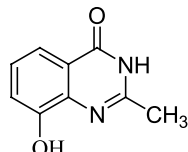
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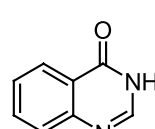
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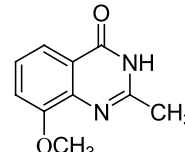
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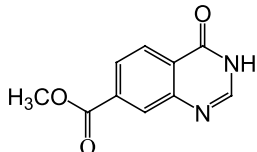
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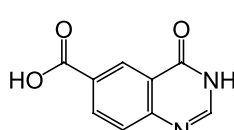
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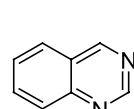
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102349



243230

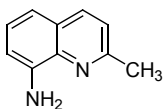


Cat. No.	Description	CAS
285025	4-Amino-2-chloro-6,7-dimethoxyquinazoline, 98%	23680-84-4
231259	6-Bromo-2-methylquinazolin-4(3H)-one, 97%	5426-59-5
253555	2,4-Dichloro-6,7-dimethoxyquinazoline, 98%	27631-29-4
370693	2,4-Dihydroxy-6,7-dimethoxyquinazoline, 99%	28888-44-0
345617	6,7-Dimethoxy-3H-quinazolin-4-one, 97%	13794-72-4
252838	8-Hydroxy-2-methylquinazolin-4-one, 97%	90417-38-2
205437	4-Hydroxyquinazoline, 98%	491-36-1
187375	8-Methoxy-2-methylquinazolin-4(3H)-one, 97%	90915-45-0
239150	Methyl 4-hydroxyquinazoline-7-carboxylate, 97%	313535-84-1
102349	4(3H)-Oxoquinazolin-6-carboxylic acid, 97%	33986-75-3
243230	Quinazoline, 98%	253-82-7

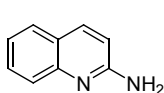
# Quinolines

Quinoline and its derivatives are useful in many fields of chemistry, such as the preparation of nicotinic acids and hydroxyl quinoline drugs, phthalocyanine blue pigments, photosensitive dyes, pesticides and rubber accelerators. They can also be employed as solvents, impregnating agents, corrosion inhibitors, as well as for many other uses.

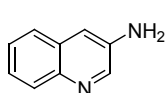
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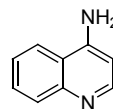
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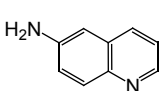
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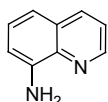
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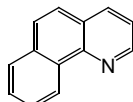
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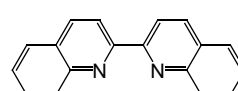
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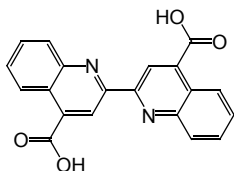
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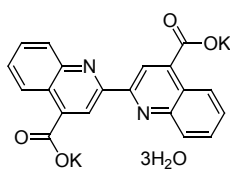
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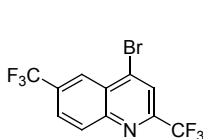
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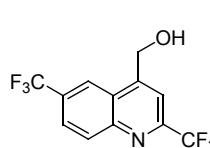
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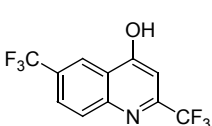
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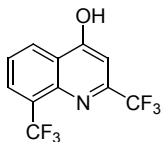
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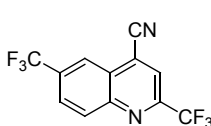
192721



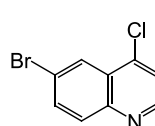
287455



792789

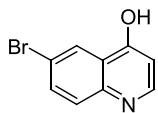


122195

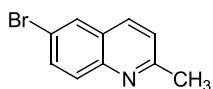


Cat. No.	Description	CAS
384633	8-Amino-2-methylquinoline, 98%	18978-78-4
270125	2-Aminoquinoline, 98%	580-22-3
212337	3-Aminoquinoline, 99%	580-17-6
411441	4-Aminoquinoline, 97.5%	578-68-7
142367	6-Aminoquinoline, 99%	580-15-4
100517	8-Aminoquinoline, 98%	578-66-5
417222	7,8-Benzoquinoline, 98%	230-27-3
246296	2,2'-Biquinoline, 98%	119-91-5
481193	2,2'-Biquinoline-4,4'-dicarboxylic acid, BCA, 98%	1245-13-2
620556	2,2'-Biquinoline-4,4'-dicarboxylic acid dipotassium salt trihydrate, 99%	207124-63-8
792785	2,6-Bis(trifluoromethyl)-4-bromoquinoline, 97%	35853-48-6
792786	2,6-Bis(trifluoromethyl)-4-hydroxymethylquinoline, 97%	1185292-81-2
192721	2,6-Bis(trifluoromethyl)-4-hydroxyquinoline, 97%	35877-04-4
287455	2,8-Bis(trifluoromethyl)-4-hydroxyquinoline, 99%	35853-41-9
792789	2,6-Bis(trifluoromethyl)quinoline-4-carbonitrile, 97%	206559-70-8
122195	6-Bromo-4-chloroquinoline, 97%	65340-70-7

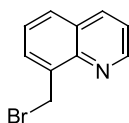
426878



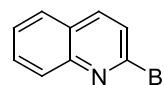
173195



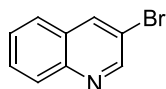
100125



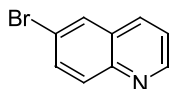
528658



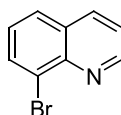
261772



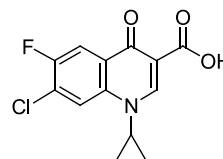
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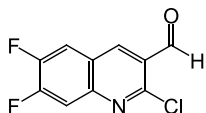
238423



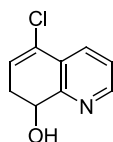
114776



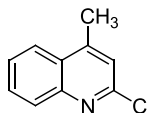
998486



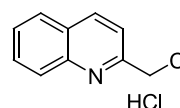
910691



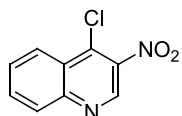
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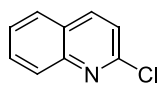
198216



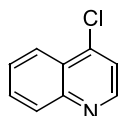
221037



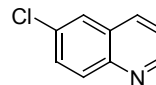
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446659



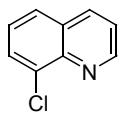
405576



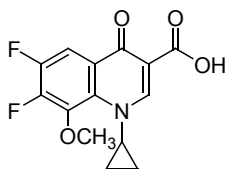
Cat. No.	Description	CAS
426878	6-Bromo-4-hydroxyquinoline, 98%	145369-94-4
173195	6-Bromo-2-methylquinoline, 98%	877-42-9
100125	8-(Bromomethyl)quinoline, 97%	7496-46-0
528658	2-Bromoquinoline, 97%	2005-43-8
261772	3-Bromoquinoline, 98%	5332-24-1
201275	6-Bromoquinoline, 98%	5332-25-2
238423	8-Bromoquinoline, 98%	16567-18-3
114776	7-Chloro-1-cyclopropyl-6-fluoro-4-oxo-1,4-dihydroquinoline-3-carboxylic acid, 98%	86393-33-1
998486	2-Chloro-6,7-difluoro-3-quinolinecarboxaldehyde, 98%	209909-13-7
910691	5-Chloro-8-hydroxyquinoline, 95%	130-16-5
103682	2-Chloro-4-methylquinoline, 97%	634-47-9
198216	2-(Chloromethyl)quinoline hydrochloride, 97%	3747-74-8
221037	4-Chloro-3-nitroquinoline, 98%	39061-97-7
166326	2-Chloroquinoline, 98%	612-62-4
446659	4-Chloroquinoline, 99%	611-35-8
405576	6-Chloroquinoline, 97%	612-57-7

## Quinolines

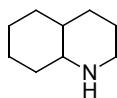
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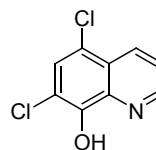
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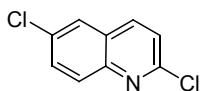
418991



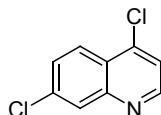
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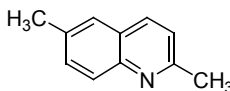
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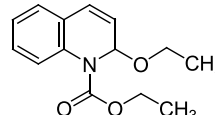
610255



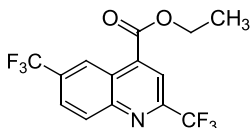
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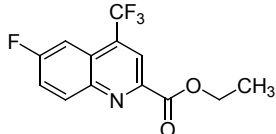
207005



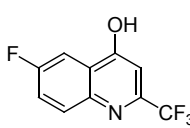
784867



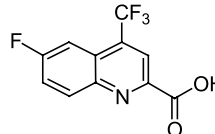
264424



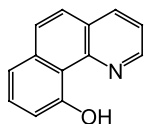
607419



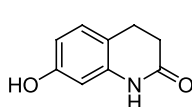
111728



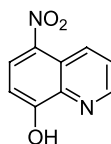
332482



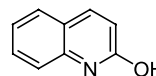
393553



313285

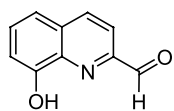


389762

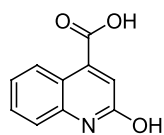


Cat. No.	Description	CAS
245384	8-Chloroquinoline, 99%	611-33-6
467015	1-Cyclopropyl-6,7-difluoro-8-methoxy-4-oxo-1,4-dihydroquinoline-3-carboxylic acid, 98.5%	112811-72-0
418991	Decahydroquinoline, 98%	2051-28-7
944627	5,7-Dichloro-8-hydroxyquinoline, 98%	773-76-2
317008	2,6-Dichloroquinoline, 97%	1810-72-6
610255	4,7-Dichloroquinoline, 99%	86-98-6
128528	2,6-Dimethylquinoline, 98%	877-43-0
207005	N-Ethoxycarbonyl-2-ethoxy-1,2-dihydroquinoline, EEDQ, 99%	16357-59-8
784867	Ethyl 2,6-bis(trifluoromethyl)quinoline-4-carboxylate, 97%	1185292-62-9
264424	Ethyl 6-fluoro-4-(trifluoromethyl)quinoline-2-carboxylate, 97%	1116339-58-2
607419	6-Fluoro-4-hydroxy-2-(trifluoromethyl)quinoline, 97%	31009-34-4
111728	6-Fluoro-4-(trifluoromethyl)quinoline-2-carboxylic acid, 97%	596845-42-0
332482	10-Hydroxybenzo[h]quinoline, 98%	33155-90-7
393553	7-Hydroxy-3,4-dihydro-2(1H)-quinolinone, 98%	22246-18-0
313285	8-Hydroxy-5-nitroquinoline, 96%	4008-48-4
389762	2-Hydroxyquinoline, 99%	59-31-4

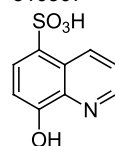
116576



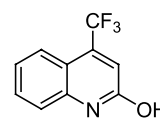
988976



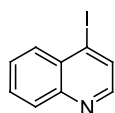
510507



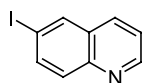
107410



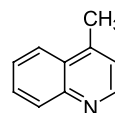
529063



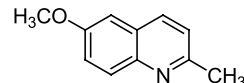
909639



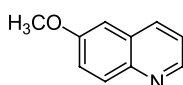
131729



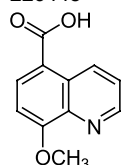
454634



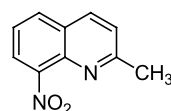
168213



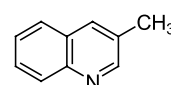
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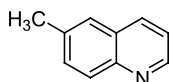
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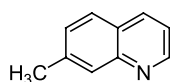
533556



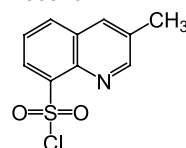
148797



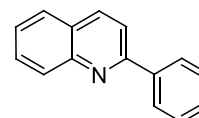
900680



195326



502531

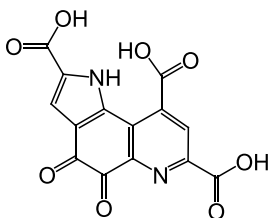


Cat. No.	Description	CAS
116576	8-Hydroxyquinoline-2-carboxaldehyde, 98%	14510-06-6
988976	2-Hydroxyquinoline-4-carboxylic acid, 98%	15733-89-8
510507	8-Hydroxyquinoline-5-sulfonic acid, 98%	84-88-8
107410	2-Hydroxy-4-(trifluoromethyl)quinoline, 98%	25199-84-2
529063	4-Iodoquinoline, 98%	16560-43-3
909639	6-Iodoquinoline, 97%	13327-31-6
131729	Lepidine, 99%	491-35-0
454634	6-Methoxy-2-methylquinoline, 98.5%	1078-28-0
168213	6-Methoxyquinoline, 98%	5263-87-6
226448	8-Methoxyquinoline-5-carboxylic acid, 98%	199871-63-1
312443	2-Methyl-8-nitroquinoline, 98%	881-07-2
533556	3-Methylquinoline, 98%	612-58-8
148797	6-Methylquinoline, 98%	91-62-3
900680	7-Methylquinoline, 98%	612-60-2
195326	3-Methyl-8-quinolinesulfonyl chloride, 98%	74863-82-4
502531	2-Phenylquinoline, 99%	612-96-4

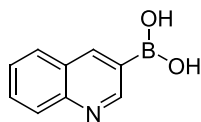


## Quinolines

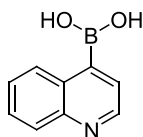
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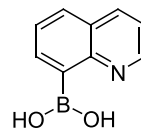
264520



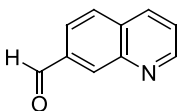
531595



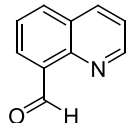
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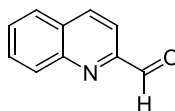
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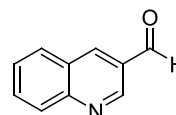
100126



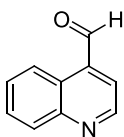
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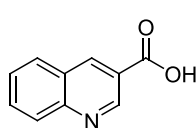
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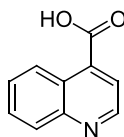
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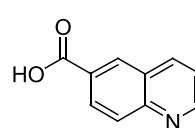
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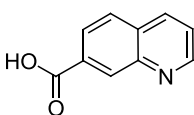
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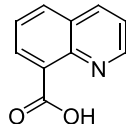
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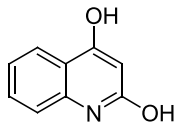
108388



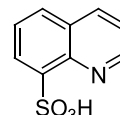
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449491

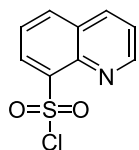


567551

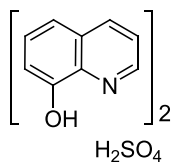


Cat. No.	Description	CAS
141977	Pyrroloquinoline quinone, PQQ, 98%	72909-34-3
264520	Quinoline-3-boronic acid, 97%	191162-39-7
531595	Quinoline-4-boronic acid, 98%	371764-64-6
272316	Quinoline-8-boronic acid, 99%	86-58-8
463616	7-Quinolinecarbaldehyde, 98%	49573-30-0
100126	8-Quinolinecarbaldehyde, 97%	38707-70-9
166750	2-Quinolinecarboxaldehyde, 98%	5470-96-2
121990	3-Quinolinecarboxaldehyde, 98%	13669-42-6
219575	4-Quinolinecarboxaldehyde, 97%	4363-93-3
371055	3-Quinolinecarboxylic acid, 98%	6480-68-8
173209	4-Quinolinecarboxylic acid, 97%	486-74-8
475137	6-Quinolinecarboxylic acid, 98%	10349-57-2
108388	7-Quinolinecarboxylic acid, 98%	1078-30-4
100127	8-Quinolinecarboxylic acid, 98%	86-59-9
449491	2,4-Quinolinediol, 97%	86-95-3
567551	Quinoline-8-sulfonic acid, 99%	85-48-3

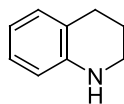
398192



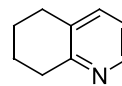
338951



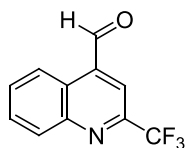
135672



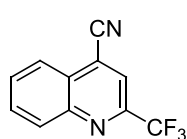
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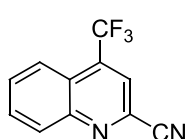
784495



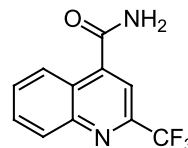
784858



199523



784857




Cat. No.	Description	CAS
398192	8-Quinoline-sulfonyl chloride, 98%	18704-37-5
338951	8-Quinolinol sulfate, 99.5%	134-31-6
135672	1,2,3,4-Tetrahydroquinoline, 98%	635-46-1
157542	5,6,7,8-Tetrahydroquinoline, 98%	10500-57-9
784495	2-(Trifluoromethyl)quinoline-4-carbaldehyde, 97%	78946-17-5
784858	2-(Trifluoromethyl)quinoline-4-carbonitrile, 97%	18706-26-8
199523	4-(Trifluoromethyl)quinoline-2-carbonitrile, 97%	25199-89-7
784857	2-(Trifluoromethyl)quinoline-4-carboxamide, 97%	1185292-59-4

# Spirocyclic Compounds

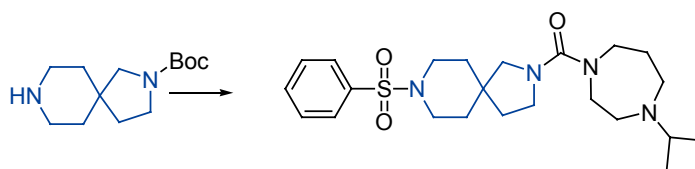
A spiro compound is a bicyclic organic compound with rings connected through just one atom. The rings can be different or identical. The connecting atom, called the spiroatom, is most often a quaternary carbon ("spiro carbon").

The structural rigidity and feasibility for further structural elaboration through three-dimensional drug space have allowed spiro-bicyclic compounds to be applied in many bioactive molecules; this is one of the key strategies in modern medicinal chemistry.

J&K categorizes these novel spiro compounds based simply on their ring systems. For instance, 2-Oxa-6-azaspiro[3.4]octane () is one of the chemicals of the 5+4 system. We can provide all of the common kinds of spiro compound systems as outlined below:

## ■ [6+5]-Spirocyclic Compounds

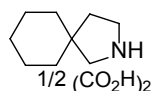
2-Boc-2,8-diaza-spiro[4.5]decane has been used as the key intermediate in the synthesis of spirofused piperazine and diazepane amides. These compounds should provide useful starting points and tools to investigate further the importance of selective H antagonists for drug therapy in a variety of potential disease states.



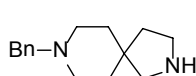
## References

J. Med. Chem., 2014, 57, 733-758

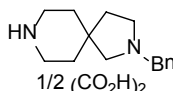
1175510



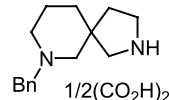
912509



1549294



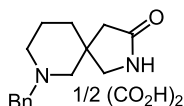
1711618



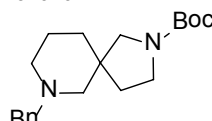
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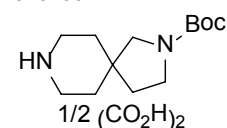
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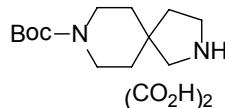
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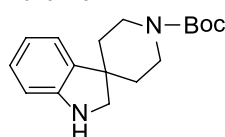
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1139418



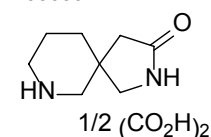
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1117933

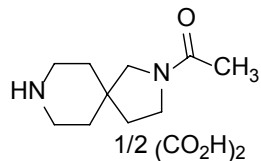


155339

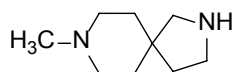


Cat. No.	Description	CAS
1175510	2-Azaspiro[4.5]decane hemioxalate, 95%	176-66-9
912509	8-Benzyl-2,8-diazaspiro[4.5]decane, 95%	336191-15-2
1549294	2-Benzyl-2,8-diazaspiro[4.5]decane hemioxalate, 95%	867009-61-8
1711618	7-Benzyl-2,7-diazaspiro[4.5]decane hemioxalate, 95%	1086395-18-7
1558751	8-Benzyl-2,8-diazaspiro[4.5]decan-3-one, 95%	154495-69-9
1711617	7-Benzyl-2,7-diazaspiro[4.5]decan-3-one hemioxalate, 95%	1312760-55-6
1549291	2-Boc-7-benzyl-2,7-diazaspiro[4.5]decane, 95%	1245649-93-7
328108	2-Boc-2,8-diazaspiro[4.5]decane hemioxalate, 95%	336191-17-4
1139418	8-Boc-2,8-diazaspiro[4.5]decane oxalate, 95%	236406-39-6
1019223	1'-Boc-spiro[indoline-3,4'-piperidine], 96%	180465-84-3
1117933	2,8-Diazaspiro[4.5]decan-3-one, 95%	561314-57-6
1553395	2,7-Diazaspiro[4.5]decan-3-one hemioxalate, 95%	1158750-89-0

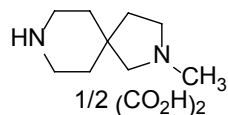
1586814



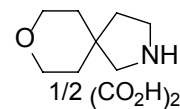
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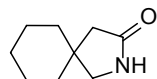
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908679



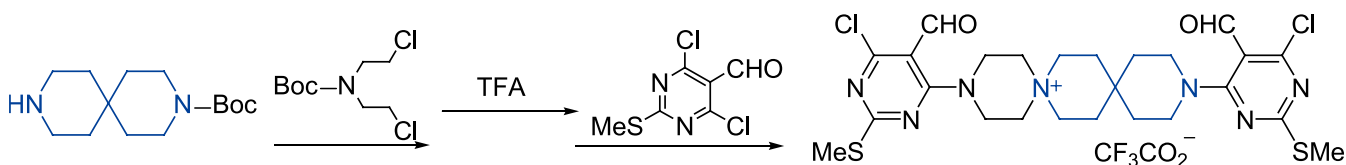
511395



Cat. No.	Description	CAS
1586814	1-(2,8-Diazaspiro[4.5]decan-2-yl)ethanone hemioxalate, 95%	870082-43-2
1117680	8-Methyl-2,8-diazaspiro[4.5]decane, 95%	1158750-98-1
1139419	2-Methyl-2,8-diazaspiro[4.5]decane hemioxalate, 95%	1061873-16-2
908679	8-Oxa-2-azaspiro[4.5]decane hemioxalate, 95%	310-93-0
511395	4,4-Pentamethylene-2-pyrrolidinone, 98%	64744-50-9

#### ■ [6+6]-Spirocyclic Compounds

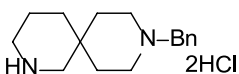
3,9-Diazaspiro[5.5]undecane has been used in the synthesis of the analogues of adhesamine. A study combined chemical, physicochemical, and cell biological experiments, using adhesamine and its analogues, to examine the mechanism by which this dumbbell-shaped, nonpeptidic molecule induces physiologically relevant cell adhesion. The results suggest that multiple adhesamine molecules cooperatively bind to heparan sulfate and induce its assembly, promoting clustering of heparan sulfate-bound syndecan-4 on the cell surface.



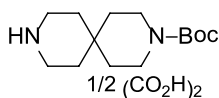
#### References

Takemoto, N.; Suehara, T.; et al. *J. Am. Chem. Soc.*, **2013**, 135, 11032–11039.

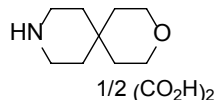
1574407



536697



1139449

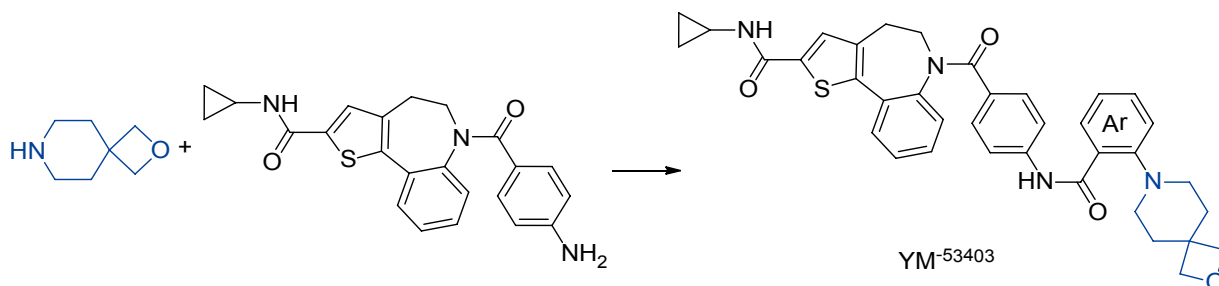


Cat. No.	Description	CAS
1574407	9-Benzyl-2,9-diazaspiro[5.5]undecane dihydrochloride, 95%	1198286-24-6
536697	3-Boc-3,9-diazaspiro[5.5]undecane hemioxalate, 95%	173405-78-2
1139449	3-Oxa-9-azaspiro[5.5]undecane hemioxalate, 95%	311-21-7

# Spirocyclic Compounds

## ■ [6+4]-Spirocyclic Compounds

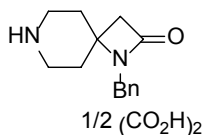
Modified by an oxetane spiro-fused piperidine, the derivatives of YM-53403 have been found to give significantly improved antiviral activity against RSV A2 and RSV B-WST; this discovery provides new knowledge that may pave the way towards effective RSV therapeutics and new tool compounds to interrogate RSV L protein function.



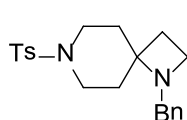
## References

Xiong, H.; Foulk, M.; et al. *Bioorg. Med. Chem. Lett.*, **2013**, 23, 6789 – 6793.

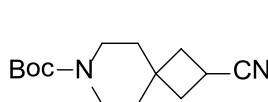
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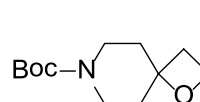
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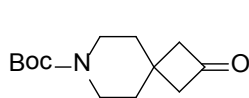
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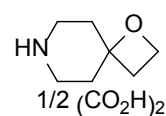
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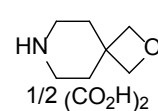
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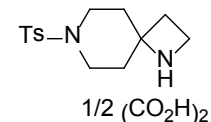
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1548995



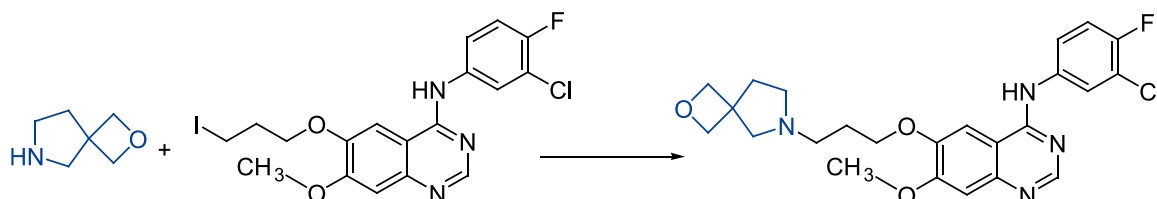
1711616



Cat. No.	Description	CAS
1711613	1-Benzyl-1,7-diazaspiro[3.5]nonan-2-one hemioxalate, 95%	1415396-42-7
1711615	1-Benzyl-7-tosyl-1,7-diazaspiro[3.5]nonane, 95%	N/A
1351181	7-Boc-2-cyano-7-azaspiro[3.5]nonane, 97%	203662-66-2
1494423	7-Boc-1-oxa-7-azaspiro[3.5]nonane, 96%	864684-96-8
1350800	7-Boc-2-oxo-7-azaspiro[3.5]nonane, 95%	203661-69-2
1581756	1-Oxa-7-azaspiro[3.5]nonane hemioxalate, 97%	1408076-14-1
1548995	2-Oxa-7-azaspiro[3.5]nonane hemioxalate, 97%	1379811-94-5
1711616	7-Tosyl-1,7-diazaspiro[3.5]nonane hemioxalate, 95%	N/A

## ■ [5+4]-Spirocyclic Compounds

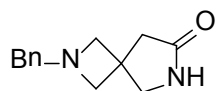
When 2-oxa-6-azaspiro[3.4]octane was substituted in 4-anilinoquinazoline derivative, higher EGFR inhibitory activities against two lung cancer cell lines (HCC827 and A549) were observed.



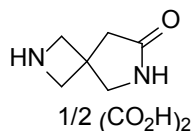
## References

Zhao, F.; Lin, Z. H.; Wang, F.; et al. *Bioorg. Med. Chem. Lett.*, **2013**, 23, 5385-5388

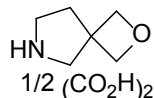
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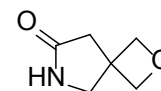
1742938



1581759



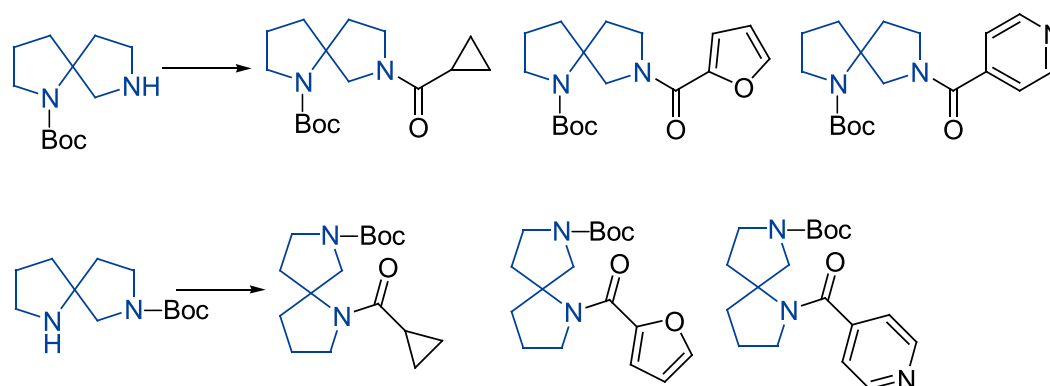
1238567



Cat. No.	Description	CAS
1581815	2-Benzyl-2,6-diazaspiro[3.4]octan-7-one, 95%	1392211-22-1
1742938	2,6-Diazaspiro[3.4]octan-7-one hemioxalate, 95%	1211515-65-9
1581759	2-Oxa-6-azaspiro[3.4]octane hemioxalate, 97%	1408075-00-2
1238567	2-Oxa-6-azaspiro[3.4]octan-7-one, 95%	1207174-87-5

## ■ [5+5]-Spirocyclic Compounds

These spiro-bicyclic compounds have been used in the synthesis of the analogues of  $\alpha 4\beta 2$  nicotinic acetylcholine receptor agonist; they have been applied in the study of a potential treatment for cognitive deficits associated with psychiatric or neurological conditions.

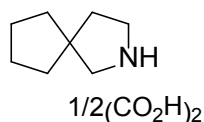


## References

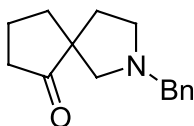
Mazurov, A. A.; Miao, L.; Bhatti, B. S.; et al. *J. Med. Chem.*, **2012**, 55, 9181-9194

## Spirocyclic Compounds

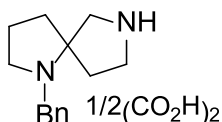
434240



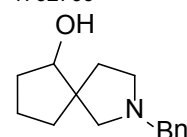
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1586812



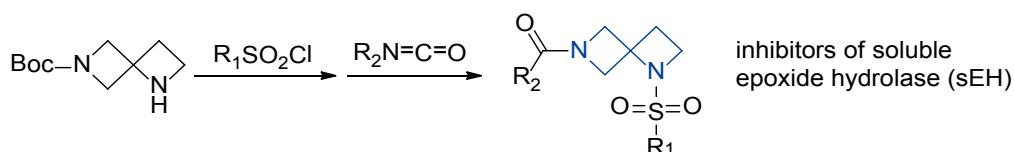
1762766



Cat. No.	Description	CAS
434240	2-Azaspiro[4.4]nonane hemioxalate, 95%	1523617-88-0
1742307	2-Benzyl-2-azaspiro[4.4]nonan-6-one, 95%	160746-93-0
1586812	1-Benzyl-1,7-diazaspiro[4.4]nonane hemioxalate, 95%	128244-01-9
1762766	6-Hydroxy-2-benzyl-2-azaspiro[4.4]nonane, 95%	186202-97-1

#### ■ [4+4]-Spirocyclic Compounds

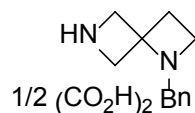
Some azetidine derivatives have been synthesized and used in therapy and/or prophylaxis, in particular to inhibitors of soluble epoxide hydrolase (sEH). The compounds are useful for treating disease states mediated by sEH, including genitourinary disease states, pain disease states, respiratory disease states, neurological disease states, immunological disease states, inflammatory disease states, cancer, nephropathy, stroke, endothelial dysfunction, prevention of ischemic events and end organ protection.



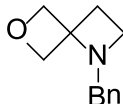
#### References

Ceccarelli, S. M.; Guerot, c.; Knust, H. US 20130109668.

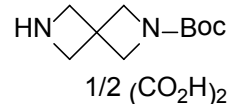
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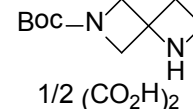
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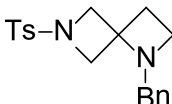
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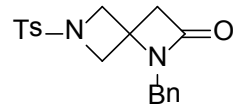
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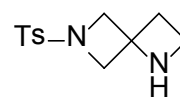
1565863



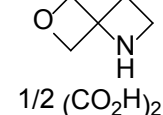
1565862



1590282



1238560



Cat. No.	Description	CAS
1351261	1-Benzyl-1,6-diazaspiro[3.3]heptane hemioxalate, 95%	1223573-42-9
1556975	1-Benzyl-6-oxa-1-azaspiro[3.3]heptane, 95%	1223573-38-3
1238563	2-Boc-2,6-diazaspiro[3.3]heptane hemioxalate, 95%	1041026-70-3
1351260	6-Boc-1,6-diazaspiro[3.3]heptane hemioxalate, 95%	1431868-60-8
1565863	6-[(4-Methylphenyl)sulfonyl]-1-benzyl-1,6-diazaspiro[3.3]heptane, 95%	1223573-36-1
1565862	6-[(4-Methylphenyl)sulfonyl]-1-benzyl-1,6-diazaspiro[3.3]heptan-2-one, 95%	1263296-91-8
1590282	6-[(4-Methylphenyl)sulfonyl]-1,6-diazaspiro[3.3]heptane, 95%	1223573-45-2
1238560	6-Oxa-1-azaspiro[3.3]heptane hemioxalate, 95%	1046153-00-7

Sulfoximines, the monoaza analogues of sulfones, are stable compounds that offer a rich and versatile chemistry<sup>[1]</sup>. They are, constitutionally and configurationally, compounds which can be easily manipulated owing to their unique structure (see figure below).

In contrast with sulfones, sulfoximines are readily soluble in protic solvents because of their low molecular weight and an additional mildly basic nitrogen atom for substitution. These features are causing sulfoximines to attract ever increasing attention in the field of medicinal chemistry.

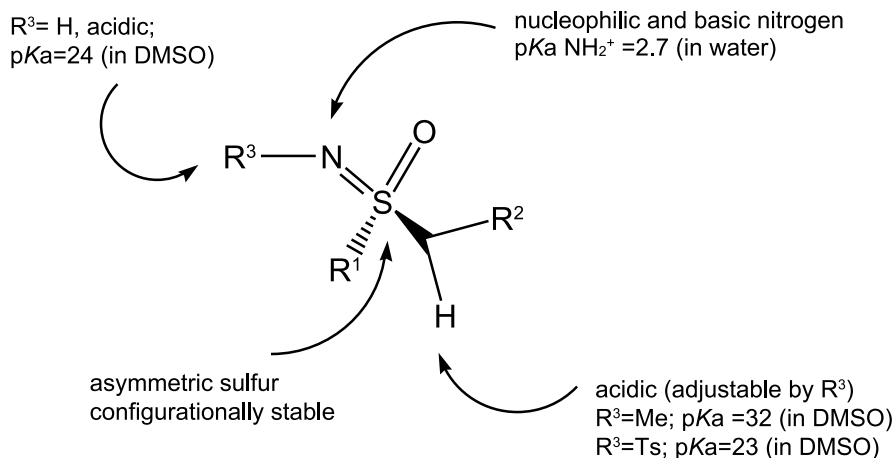
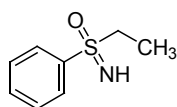


Figure Features of sulfoximines that account for their unusual chemical versatility<sup>[2]</sup>

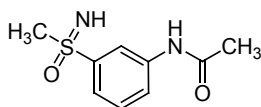
#### References

- [1] C. R. Johnson. Applications of sulfoximines in synthesis. *Aldrichimica Acta* **1985**, 18, 3-10.  
 [2] Ulrich Lücking. Sulfoximines: A Neglected Opportunity in Medicinal Chemistry. *Angew. Chem. Int. Ed.* **2013**, 52, 9399–9408.

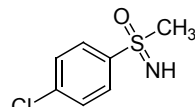
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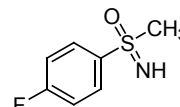
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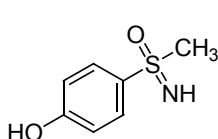
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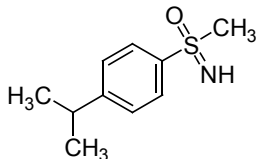
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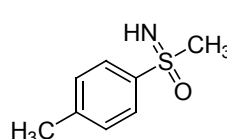
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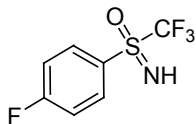
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284133



263619



Cat. No.	Description	CAS
157473	S-Ethyl-S-phenyl sulfoximine, 95%	1889-63-0
179630	S-Methyl-S-(3-acetamidophenyl) sulfoximine, 95%	N/A
210984	S-Methyl-S-(4-chlorophenyl) sulfoximine, 95%	22132-99-6
285251	S-Methyl-S-(4-fluorophenyl) sulfoximine, 90%	635311-89-6
118774	S-Methyl-S-(4-hydroxyphenyl) sulfoximine, 95%	35543-41-0
171894	S-Methyl-S-(4-isopropylphenyl) sulfoximine, 95%	1085526-18-6
180956	S-Methyl-S-(4-methylphenyl) sulfoximine, 95%	22132-97-4
284133	S-Methyl-S-(2-pyridinyl) sulfoximine, 90%	76456-06-9
263619	S-Trifluoromethyl-S-(p-fluorophenyl) sulfoximine, 95%	109139-20-0



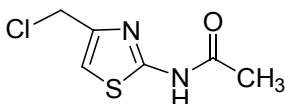
# Thiazoles

Thiazole, or 1,3-thiazole, is a heterocyclic compound that contains a sulfur and a nitrogen. The term 'thiazoles' also refers to a large family of derivatives.

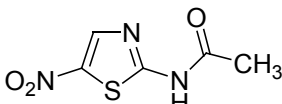
Some thiazole derivatives are important physiologically active substances or drugs. Thifluzamide, tricyclazole, and thiabendazole are marketed as pesticides for the control of various agricultural pests. An important antibacterial agent, sulfathiazole, is a hydrolyzate condensation product of 2-aminothiazole and 4-acetamidobenzene-1-sulfonyl chloride. Another widely used thiazole derivative is the non-steroidal anti-inflammatory drug meloxicam.

J&K provides novel, unique and cost-effective thiazoles and derivatives, to help chemists realize their innovative ideas.

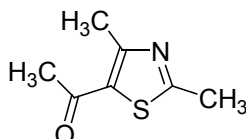
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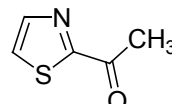
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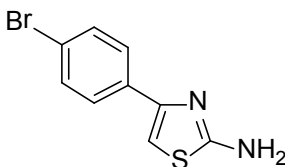
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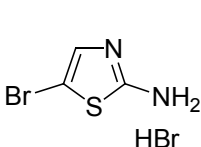
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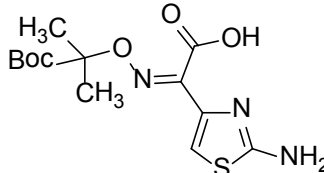
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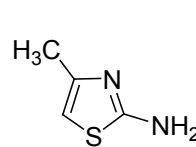
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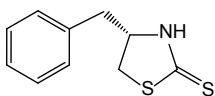
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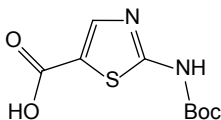
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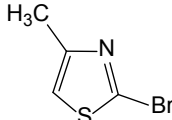
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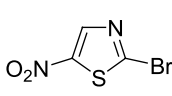
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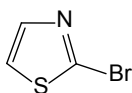


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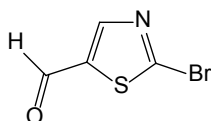


Cat. No.	Description	CAS
816461	2-Acetamido-4-(chloromethyl)-1,3-thiazole, 95%	7460-59-5
172510	2-Acetamido-5-nitrothiazole, 98%	140-40-9
206199	5-Acetyl-2,4-dimethylthiazole, 99%	38205-60-6
133794	2-Acetylthiazole, 99%	24295-03-2
609069	2-Amino-4-(4-bromophenyl)thiazole, 98%	2103-94-8
104728	2-Amino-5-bromothiazole hydrobromide, 95%	61296-22-8
545892	(Z)-2-Amino-α-[1-(tert-butoxycarbonyl)]-1-methylethoxyimino-4-thiazolacetic acid, 98%	86299-47-0
538344	2-Amino-4-methylthiazole, 98%	1603-91-4
290117	(S)-4-Benzylthiazolidine-2-thione, 99%, ee: 99%	171877-39-7
156427	2-N-Boc-amino-thiazole-5-carboxylic acid, 97%	302964-02-9
793780	2-Bromo-4-methyl-1,3-thiazole, 97%	7238-61-1
250607	2-Bromo-5-nitrothiazole, 98%	3034-48-8

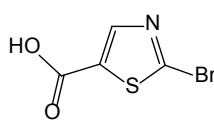
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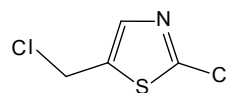
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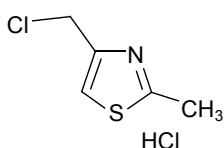
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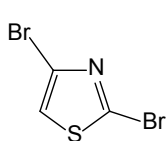
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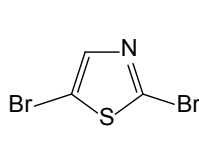
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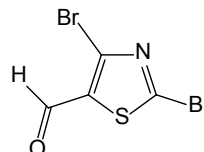
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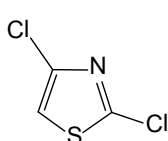
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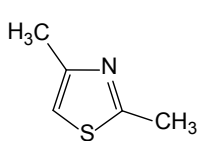
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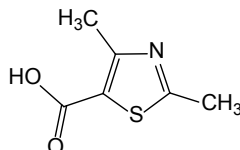
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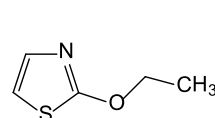
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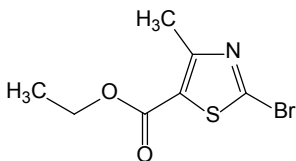
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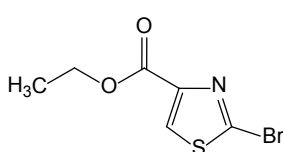
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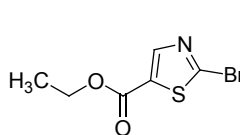
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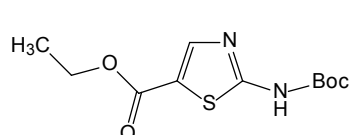
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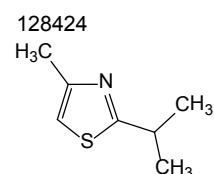
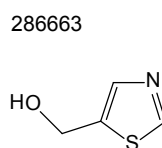
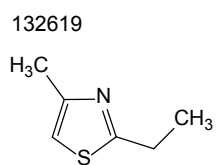
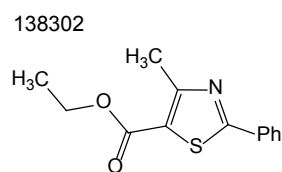


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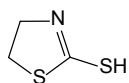


Cat. No.	Description	CAS
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125108	2-Bromothiazole-5-carboxaldehyde, 98%	464192-28-7
603079	2-Bromo-5-thiazolecarboxylic acid, 97%	54045-76-0
446596	2-Chloro-5-chloromethylthiazole, 98%	105827-91-6
407583	4-Chloromethyl-2-methylthiazole hydrochloride, 98%	77470-53-2
102202	2,4-Dibromothiazole, 98%	4175-77-3
303439	2,5-Dibromothiazole, 97%	4175-78-4
627976	2,4-Dibromothiazole-5-carbaldehyde, 97%	139669-95-7
281120	2,4-Dichlorothiazole, 98%	4175-76-2
275024	2,4-Dimethylthiazole, 99%	541-58-2
100121	2,4-Dimethyl-1,3-thiazole-5-carboxylic acid, 97%	53137-27-2
278374	2-Ethoxythiazole, 99%	15679-19-3
934618	Ethyl 2-bromo-4-methylthiazole-5-carboxylate, 98%	22900-83-0
195128	Ethyl 2-bromothiazole-4-carboxylate, 97%	100367-77-9
264636	Ethyl 2-bromothiazole-5-carboxylate, 97%	41731-83-3
170823	Ethyl 2-(tert-butoxycarbonylamino)thiazole-5-carboxylate, 97%	302964-01-8

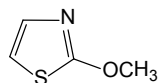
## Thiazoles



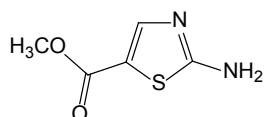
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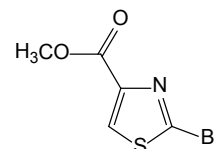
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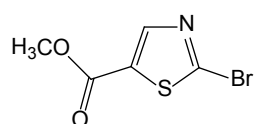
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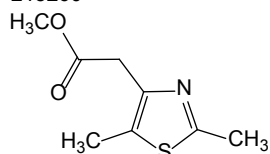
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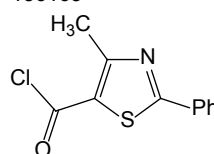
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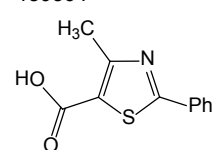
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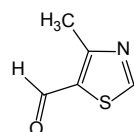
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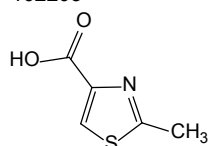
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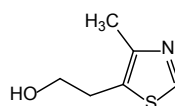
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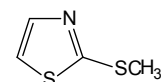
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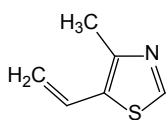


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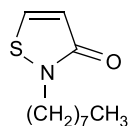


Cat. No.	Description	CAS
138302	Ethyl 4-methyl-2-phenyl-1,3-thiazole-5-carboxylate, 97%	53715-64-3
132619	2-Ethyl-4-methylthiazole, 99%	15679-12-6
286663	5-Hydroxymethylthiazole, 99%	38585-74-9
128424	2-Isopropyl-4-methylthiazole, 99%	15679-13-7
226440	2-Mercaptothiazoline, 98%	96-53-7
550100	2-Methoxythiazole, 98%	14542-13-3
528814	Methyl 2-aminothiazole-5-carboxylate, 97%	6633-61-0
523430	Methyl 2-bromothiazole-4-carboxylate, 96%	170235-26-4
210481	Methyl 2-bromothiazole-5-carboxylate, 98%	54045-74-8
215260	Methyl 2-(2,5-dimethylthiazol-4-yl) acetate, 97%	306937-37-1
136163	4-Methyl-2-phenyl-1,3-thiazole-5-carbonyl chloride, 97%	54001-18-2
189564	4-Methyl-2-phenyl-1,3-thiazole-5-carboxylic acid, 97%	33763-20-1
181086	4-Methylthiazole-5-carboxaldehyde, 98%	82294-70-0
102205	2-Methyl-1,3-thiazole-4-carboxylic acid, 97%	35272-15-2
135419	4-Methyl-5-thiazoleethanol, 98%	137-00-8
179874	2-(Methylthio)thiazole, 99%	5053-24-7

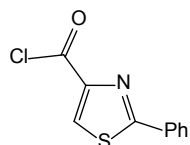
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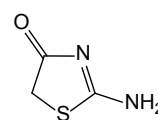
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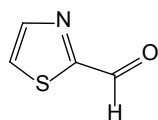
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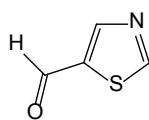
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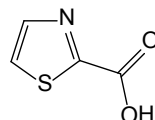
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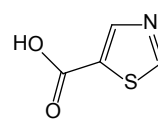
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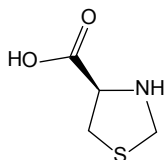
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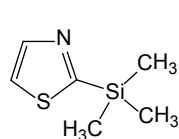
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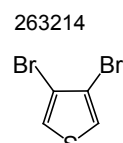
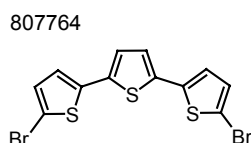
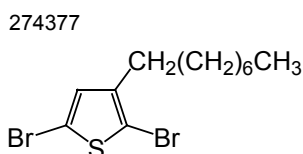
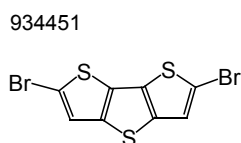
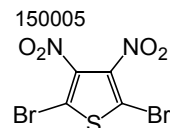
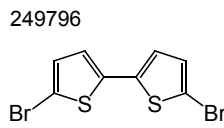
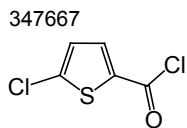
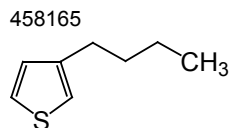
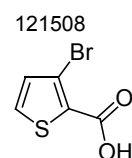
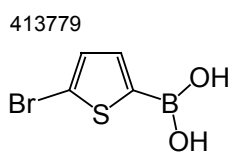
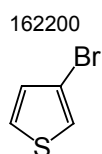
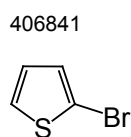
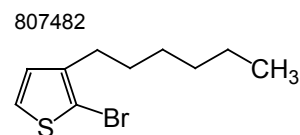
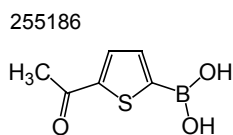
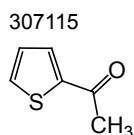
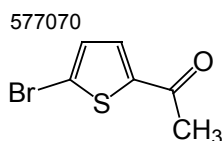


Cat. No.	Description	CAS
214964	4-Methyl-5-vinylthiazole, 99%	1759-28-0
256626	2-Octyl-4-isothiazolin-3-one, 98%	26530-20-1
196885	2-Phenyl-1,3-thiazole-4-carbonyl chloride, 97%	36094-04-9
183187	Pseudothiohydantoin, 98%	556-90-1
613181	2-Thiazolecarboxaldehyde, 97%	10200-59-6
265293	Thiazole-5-carboxaldehyde, 97%	1003-32-3
507953	Thiazole-2-carboxylic acid, 98%	14190-59-1
329315	Thiazole-5-carboxylic acid, 98%	14527-41-4
204555	L-4-Thiazolidinecarboxylic acid, 98%	34592-47-7
221634	2-Trimethylsilyl thiazole, 95%	79265-30-8

# Thiophenes

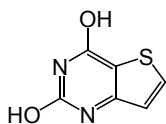
Thiophene, also called thiofuran, is a five-membered heterocyclic compound containing a sulfur and with the formula  $C_4H_4S$ . It is aromatic as indicated by its extensive substitution reactions.

Thiophene and its derivatives are important heterocyclic compounds and widely used as building blocks in the syntheses of many agrochemicals and pharmaceuticals. This is seen in examples such as the NSAID lornoxicam, the thiophene analog of piroxicam. Thiophene derivatives can also be found in other medicines, for instance, Methaphenilene, an antihistaminic agent.

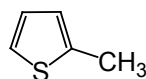


Cat. No.	Description	CAS
577070	2-Acetyl-5-bromothiophene, 98%	5370-25-2
307115	2-Acetylthiophene, 99%	88-15-3
255186	5-Acetyl-2-thiopheneboronic acid, 98%	206551-43-1
807482	2-Bromo-3-hexylthiophene, 98%	69249-61-2
406841	2-Bromothiophene, 99%	1003-09-4
162200	3-Bromothiophene, 97%	872-31-1
413779	5-Bromothiophene-2-boronic acid, 95%	162607-17-2
121508	3-Bromothiophene-2-carboxylic acid, 98%	7311-64-0
458165	3-n-Butylthiophene, 98%	34722-01-5
347667	5-Chlorothiophene-2-carbonyl chloride, 97%	42518-98-9
249796	5,5'-Dibromo-2,2'-bithiophene, 99%	4805-22-5
150005	2,5-Dibromo-3,4-dinitrothiophene, 98%	52431-30-8
934451	2,6-Dibromodithieno[3,2-b:2',3'-d]thiophene, 98%	67061-69-2
274377	2,5-Dibromo-3-octylthiophene, 98%	149703-84-4
807764	5,5''-Dibromo-2,2':5,2''-terthiophene, 98%	98057-08-0
263214	3,4-Dibromothiophene, 99%	3141-26-2

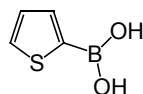
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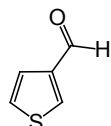
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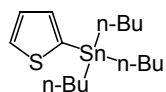
199801



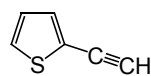
278768



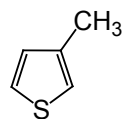
305465



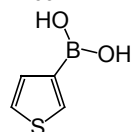
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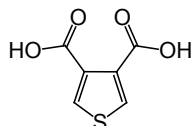
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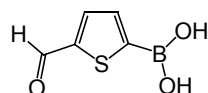
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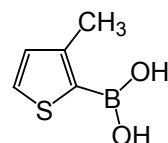
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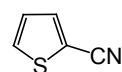
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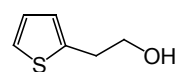
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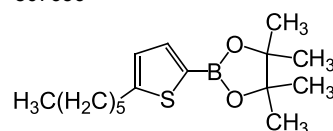
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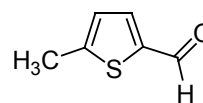
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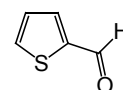
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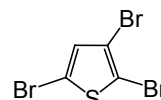
110614



124605



534469



Cat. No.	Description	CAS
126218	2,4-Dihydroxythieno[3,2-d]pyrimidine, 97%	16233-51-5
398100	2-Ethynylthiophene, 95%	4298-52-6
409351	5-Formyl-2-thiopheneboronic acid, 98%	4347-33-5
807636	5-Hexyl-2-thiopheneboronic acid pinacol ester, 96%	917985-54-7
473874	2-Methylthiophene, 98%	554-14-3
244087	3-Methylthiophene, 99%	616-44-4
136508	3-Methylthiophene-2-boronic acid, 99%	177735-09-0
110614	5-Methylthiophene-2-carboxaldehyde, 98%	13679-70-4
199801	Thiophene-2-boronic acid, 98%	6165-68-0
110927	Thiophene-3-boronic acid, 98%	6165-69-1
141242	2-Thiophenecarbonitrile, 97%	1003-31-2
124605	2-Thiophenecarboxaldehyde, 98%	98-03-3
278768	3-Thiophenecarboxaldehyde, 98%	498-62-4
554799	3,4-Thiophenedicarboxylic acid, 98%	4282-29-5
209103	2-Thiopheneethanol, 98%	5402-55-1
534469	2,3,5-Tribromothiophene, 98%	3141-24-0
305465	2-(Tributylstannyl)thiophene, 95%	54663-78-4

# Derivatization Reagents

Derivatization is the process by which a compound is chemically changed, producing a new compound that has properties more amenable to a particular analytic technique. As a key separation method, derivatization provides:

- Increased volatility, thermal stability, and peak shape
- Improved selectivity and chromatographic efficiency
- Strengthened detectability

J&K provides an extensive selection of derivatization reagents, including those used for GC and HPLC analysis, chiral separations and TLC applications. By choosing the right derivatization reagent and procedure you can increase resolution and analytic response, significantly improving your separations.

## ■ Derivatization Reagents for GC

- Acylation

Cat. No.	Description	CAS
535607	Bistrifluoroacetamide, BTFA, 98%	407-24-9
278435	$\alpha$ -Bromo-2,3,4,5,6-pentafluorotoluene, 98%	1765-40-8
322995	2,2-Dimethyl-6,6,7,7,8,8,8-heptafluoro-3,5-octanedione, 98%	17587-22-3
925290	Ethyl trifluoromethanesulfonate, 99%	425-75-2
219537	Heptafluorobutyric acid, 99%	375-22-4
120251	Heptafluorobutyric anhydride, HFBA, 98%	336-59-4
100530	1-(Heptafluorobutyl)imidazole, 97%	32477-35-3
313895	( $\pm$ )- $\alpha$ -Methoxy- $\alpha$ -(trifluoromethyl)phenylacetic acid, ( $\pm$ )-MTPA, 97%	81655-41-6
254934	N-Methyl-bis(trifluoroacetamide), MBTFA, 98%	685-27-8
217190	Pentafluorobenzoyl chloride, 99%	2251-50-5
997194	Pentafluoropropionic anhydride, PFPA, 95%, derivatization grade	356-42-3
478445	Sodium methoxide, 99%, anhydrous, powder	124-41-4
170817	2,2,6,6-Tetramethyl-3,5-heptanedione, 98%	1118-71-4
105065	2-Thenyltrifluoroacetone, TTA, 99%	326-91-0
199332	Trifluoroacetic anhydride, TFAA, 99%	407-25-0
370486	1-(Trifluoroacetyl)imidazole, 97.5%, derivatization grade	1546-79-8

- Esterification and Alkylation

Cat. No.	Description	CAS
207862	Boron trifluoride methanol, 50 wt.% solution in MeOH	373-57-9
101363	2,2-Dimethoxypropane, 98%	77-76-9
354810	N,N-Dimethylformamide di-tert-butyl acetal, 95%	36805-97-7
113009	N,N-Dimethylformamide diethyl acetal, 95%, derivatization grade	1188-33-6
191255	N,N-Dimethylformamide dimethyl acetal, DMF-DMA, 95%	4637-24-5
165540	1,1,1,3,3,3-Hexafluoro-2-propanol, HFIP, 99%	920-66-1
190359	Isobutyl chloroformate, 98%	543-27-1
221715	Methyl trifluoromethanesulfonate, 96%	333-27-7
457936	Tetramethylammonium hydroxide, TMAH, 25% solution in H <sub>2</sub> O	75-59-2
533891	(Trimethylsilyl)diazomethane, 2.0 M solution in hexanes	18107-18-1
518558	Trimethylsulfonium hydroxide, TMSH, 0.25 M solution in MeOH	17287-03-5

- Silylation

Cat. No.	Description	CAS
447636	N,O-Bis(trimethylsilyl)acetamide, BSA, 95%	10416-59-8
576242	N,O-Bis(trimethylsilyl)trifluoroacetamide, 98%	25561-30-2
472228	Bromotrimethylsilane, TMBS, 97%	2857-97-8
236144	tert-Butyldimethylchlorosilane, TBDMSCI, 99%	18162-48-6
296944	N-tert-Butyldimethylsilyl-N-methyltrifluoroacetamide, MTBSTFA, 97%	77377-52-7
305146	Chloro(chloromethyl)dimethylsilane, CMDMCS, 98%	1719-57-9
104880	Chlorodimethylethylsilane, 97%	6917-76-6
459545	Chlorotriethylsilane, TESCI, 1.0 M solution in THF	994-30-9
458784	Chlorotrimethylsilane, TMCS, 99%, J&KSeal	75-77-4
584711	Dichlorodiethylsilane, 97%	1719-53-5
562900	N,N-Diethyltrimethylsilylamine, TMS-DEA, 97%	996-50-9
245053	1,3-Diphenyl-1,1,3,3-tetramethyldisilazane, 95%	3449-26-1
543142	Heptamethyldisilazane, 98%	920-68-3
996309	Hexamethyldisilazane, HMDS, 99%, J&KSeal	999-97-3
131611	Hexamethyldisiloxane, 97%	107-46-0
391175	Isopropyldimethylchlorosilane, 97%, derivatization grade	3634-56-8
123746	N-Methyl-N-(trimethylsilyl)trifluoroacetamide, MSTFA, 97%	24589-78-4
585626	1,1,3,3-Tetramethyldisilazane, TMDS, 97%	15933-59-2
600909	N-Trimethylsilylimidazole, TMSI, 98%	18156-74-6

- Others

Cat. No.	Description	CAS
532517	n-Butylboronic acid, 97.5%	4426-47-5
369954	O-(2,3,4,5,6-Pentafluorobenzyl)hydroxylamine hydrochloride, PFBHA·HCl, 99%, derivatization grade	57981-02-9
390913	Phenylboronic acid, 99%	98-80-6

- Derivatization Reagents for HPLC

- UV Detection

Cat. No.	Description	CAS
602529	4-Aminoantipyrine, 98%	83-07-8
112138	Benzenesulfonyl chloride, 99%	98-09-9
438305	Benzoin, 98%	119-53-9
366373	2-Bromoacetophenone, 99%	70-11-1
100792	2-Bromo-3'-methoxyacetophenone, 98%, derivatization grade	5000-65-7
154661	(-)-10-Camphorsulfonic acid, 99%	35963-20-3
562385	4-(N-Chloroformylmethyl-N-methylamino)-7-nitro-2,1,3-benzoxadiazole, NBD-COCl, 92%, derivatization grade	140164-85-8
929073	Dabsyl chloride, DABS-Cl, 98%, derivatization grade	56512-49-3
279588	2,4'-Dibromoacetophenone, 98%	99-73-0
439198	Dimedone, 98%	126-81-8



# Derivatization Reagents

Cat. No.	Description	CAS
121248	4-(Dimethylamino)azobenzene 4'-Isothiocyanate, DABITC, 97%	7612-98-8
121011	4-Dimethylaminobenzoyl chloride, 97%	4755-50-4
164579	5-Dimethylamino-1-naphthalenesulfonyl chloride, DNSCI, 98%	605-65-2
343109	3,5-Dinitrobenzoyl chloride, DNBC, 99%	99-33-2
191243	N,N'-Disuccinimidyl carbonate, DSC, 99%	74124-79-1
128686	9-Fluorenylmethyl carbazate, 98%, derivatization grade	35661-51-9
197308	9-Fluorenylmethyl chloroformate, Fmoc-Cl, 98%	28920-43-6
508752	Marfey's reagent, 98%	95713-52-3
376516	4-Methoxybenzoyl chloride, 99%	100-07-2
343352	3-Methyl-1-phenyl-2-pyrazolin-5-one, 98%	89-25-8
586813	N-Methylphthalimide, 98%	550-44-7
201896	1-Naphthyl isocyanate, 99%, derivatization grade	86-84-0
249447	1-Naphthyl isothiocyanate, 98%, derivatization grade	551-06-4
603426	4-Nitrobenzyl bromide, 99%	100-11-8
405140	Phenyl isothiocyanate, 98%, for sequential analysis	103-72-0
133490	(S)-(-)-1-Phenyl-1-propanol, 98%, ee: 90%	613-87-6
227585	o-Phthalaldehyde, 99%	643-79-8
333410	N-(1-Pyrenyl)maleimide, 97%	42189-56-0
135775	Salicylaldehyde, 99%	90-02-8
283322	p-Toluenesulfonyl chloride, 99%	98-59-9
417912	m-Toluoyl chloride, 98.5%	1711-06-4

- Fluorescence Detection

Cat. No.	Description	CAS
612818	N-(9-Acridinyl)maleimide, NAM, 98%	49759-20-8
270732	2-Aminopyridine, 2-AP, 99%	504-29-0
102767	4-(Aminosulfonyl)-7-fluoro-2,1,3-benzoxadiazol, ABD-F, 98%, derivatization grade	91366-65-3
152014	2-Aminothiophenol, 99%	137-07-5
153880	Benzylamine, 99%	100-46-9
992216	9-(Bromomethyl)acridine, 98%, derivatization grade	1556-34-9
418944	4-Bromomethyl-7-methoxycoumarin, 97%	35231-44-8
434551	9-Chloromethylantracene, 98%	24463-19-2
525618	Cyanoacetamide, 99%	107-91-5
385727	1,3-Cyclohexanedione, 99%	504-02-9
276443	Dansyl hydrazine, 98%	33008-06-9
279588	2,4'-Dibromoacetophenone, 98%	99-73-0
452067	(1S,2S)-(-)-1,2-Diphenylethylenediamine, 99%	29841-69-8
315447	2-Fluorencarboxaldehyde, 99%	30084-90-3
128686	9-Fluorenylmethyl carbazate, 98%, derivatization grade	35661-51-9
197308	9-Fluorenylmethyl chloroformate, Fmoc-Cl, 98%	28920-43-6
988398	Fluorescamine, 98%	38183-12-9
194222	Fluorescein 5(6)-isothiocyanate, 5(6)-FITC, 95%, for fluorescence, mixture of 5- and 6- isomers	27072-45-3

Cat. No.	Description	CAS
255493	Fluorescein isothiocyanate isomer I, FITC(isomer I), 95%	3326-32-7
196963	7-Fluorobenzofurazan-4-sulfonic acid ammonium salt, SBD-F, 99%, derivatization grade	84806-27-9
301307	4-Fluoro-7-nitrobenzofurazan, NBD-F, 98%	29270-56-2
205040	4-Hydrazino-7-nitro-benzofurazan hydrazine adduct, NBD-H, 98%, derivatization grade	131467-87-3
337922	2,3-Naphthalenedicarboxaldehyde, 99%, derivatization grade	7149-49-7
576646	o-Phenylenediamine, OPD, 99.5%	95-54-5
970576	Pyridoxal 5'-phosphate monohydrate, 99%	41468-25-1
453665	3-Pyridyl isothiocyanate, 95%, derivatization grade	17452-27-6

- Chemiluminescence Detection

Cat. No.	Description	CAS
482541	N-(4-Aminobutyl)-N-ethylisoluminol, ABEI, 97%	66612-29-1
227560	2,3-Dihydro-6-isothiocyanato-1,4-phthalazinedione, 96%	107807-39-6

- Derivatization Reagents for Chiral Detection

- Chiral GC Derivatization Reagents

Cat. No.	Description	CAS
189438	(-)-Camphanic acid chloride, 98%	39637-74-6
571643	(R)-(+)- $\alpha$ -Methoxy- $\alpha$ -(trifluoromethyl)phenylacetic acid, (+)-MTPA, 98%, ee: 99.5%	20445-31-2
192146	(S)-(-)- $\alpha$ -Methoxy- $\alpha$ -(trifluoromethyl)phenylacetic acid, (-)-MTPA, 98%	17257-71-5
191106	(S)-(+)- $\alpha$ -Methoxy- $\alpha$ -(trifluoromethyl)phenylacetyl chloride, 99%	20445-33-4
241739	(R)-(+)-1-(1-Naphthyl)ethylamine, 99%	3886-70-2
390305	(S)-(-)-1-(1-Naphthyl)ethylamine, 99%	10420-89-0
297184	D-(+)-2-Octanol, 99%	6169-06-8
238277	L-(-)-2-Octanol, 99%	5978-70-1
457038	(R)-(+)-1-Phenylethanol, 99%, for chiral derivatization	1517-69-7
284516	(S)-(-)-1-Phenylethanol, 99%, for chiral derivatization	1445-91-6
134448	(S)-(-)-1-Phenylethylamine, 99%, ee: 98%	2627-86-3

- Chiral LC Derivatization Reagents

Cat. No.	Description	CAS
215457	Boc-L-cysteine, 98%, for chiral derivatization	20887-95-0
485835	(+)-10-Camphorsulfonic acid, (+)-CSA, 99%	3144-16-9
433825	L-(-)-10-Camphorsulfonyl chloride, 98%	39262-22-1
497970	(R)-(-)-N-(3,5-Dinitrobenzoyl)- $\alpha$ -phenylglycine, 98%	74927-72-3
620470	(+)-1-(9-Fluorenyl)ethyl chloroformate, $\geq 18$ mM in acetone	107474-79-3
198485	(R)-(-)-O-Formylmandeloyl chloride, 98%	29169-64-0
107382	(R)-(-)- $\alpha$ -Methoxyphenylacetic acid, 99%	3966-32-3
441219	(S)-(+)- $\alpha$ -Methoxyphenylacetic acid, 99%, for chiral derivatization	26164-26-1
191107	(R)-(-)- $\alpha$ -Methoxy- $\alpha$ -(trifluoromethyl)phenylacetyl chloride, (-)-MTPA-Cl, 99%	39637-99-5
356622	(-)- $\alpha$ -Methylbenzyl isothiocyanate, 98%, for chiral derivatization	24277-44-9

# Derivatization Reagents



## Derivatization Reagents for TLC

Cat. No.	Description	CAS
608111	4-Aminobenzenesulfonic acid, 99%	121-57-3
199896	p-Anisaldehyde, 99%	123-11-5
427024	1,4-Benzoquinone, 99%	106-51-4
107095	2,2'-Bipyridine, 99%	366-18-7
552604	Bromocresol Green, BCG, indicator, ACS reagent	76-60-8
137657	Bromothymol Blue, indicator, ACS reagent	76-59-5
472252	o-Dianisidine, 98%	119-90-4
223219	2',7'-Dichlorofluorescein	76-54-0
284784	2,6-Dichloroindophenol sodium salt hydrate, DCIP, 98%	620-45-1
288995	3,5-Dihydroxytoluene monohydrate, 98%	6153-39-5
602425	4-Dimethylaminobenzaldehyde, 99%	100-10-7
280243	5-(4-Dimethylaminobenzylidene)rhodanine, 97%	536-17-4
125830	Dimethylglyoxime, 99%	95-45-4
276988	Diphenylamine, 99%	122-39-4
149895	Iodine, 99.8%, ACS reagent	7553-56-2
104092	3-Methyl-2-benzothiazolinone hydrazone hydrochloride monohydrate, MBTH, 98%	38894-11-0
122337	Ninhydrin, ACS reagent	485-47-2
904190	Potassium bromide, 99%, IR grade	7758-02-3
174331	Sodium p-toluenesulfonchloramide trihydrate, 97%	7080-50-4
424435	Starch, from corn	9005-25-8
370201	Tetracyanoethylene, TCNE, 98%	670-54-2
981206	N,N,N',N'-Tetramethyl-p-phenylenediamine dihydrochloride, TMPD, 98%	637-01-4
296617	p-Toluenesulfonic acid monohydrate, 99%	6192-52-5
286719	o-Toluidine, 98.5%	95-53-4
216624	1,3,3-Trimethyl-2-methyleneindoline, 95%	118-12-7
118388	2,3,5-Triphenyl-2H-tetrazolium chloride, 98%	298-96-4
188374	Vanillin, 99%	121-33-5

## Derivatization Reagents for MS

Cat. No.	Description	CAS
220778	2-Aminobenzamide, 98%	88-68-6
228313	2-(Aminomethyl)pyridine, 99%	3731-51-9
235074	9-Anthracenemethanol, 97%	1468-95-7
229921	2-Bromopyridine-5-boronic acid, 96%	223463-14-7
148928	O-(Carboxymethyl)hydroxylamine hemihydrochloride, 98%, derivatization grade	2921-14-4
182456	Diethyl ethoxymethylenemalonate, 98%	87-13-8
154090	2-Fluoro-1-methylpyridinium p-toluenesulfonate, 98%	58086-67-2
509681	Girard's Reagent T, 98%	123-46-6
476922	2-Hydrazinopyridine, 97%	4930-98-7
249096	2-Mercaptoethanol, BME, 99%, for electrophoresis and molecular biology	60-24-2

## Derivatization Reagents

Cat. No.	Description	CAS
432347	2-Nitrophenylhydrazine hydrochloride, 98%, derivatization grade	6293-87-4
390757	Pentafluorophenylhydrazine, 97%	828-73-9
303168	p-Toluenesulfonyl isocyanate, 96%	4083-64-1

# Indicators

J&K provides various of indicators for analytical laboratories' daily use and research, including pH indicators, complexometric indicator, adsorption indicators, redox indicators, and indicators for nonaqueous titration.

## ■ pH Indicators

Cat. No.	Description	CAS
293619	Basic Fuchsin, 88%, indicator	632-99-5
305828	Benzopurpurine 4B, indicator	992-59-6
989854	Bis-(4-hydroxy-1-naphthyl)phenylmethanol, indicator	6948-88-5
541001	Brilliant Yellow, dye content 70%, indicator	3051-11-4
552604	Bromocresol Green, indicator, ACS reagent	76-60-8
422158	Bromocresol Purple, indicator, ACS reagent	115-40-2
198594	Bromocresol Purple sodium salt, 90%, indicator	62625-30-3
612335	Bromophenol Blue, indicator	115-39-9
411993	Bromophenol Red, indicator	2800-80-8
137657	Bromothymol Blue, indicator, ACS reagent	76-59-5
577774	Bromothymol Blue sodium salt, indicator, ACS reagent	34722-90-2
358566	Chlorophenol Red, 95%, indicator	4430-20-0
455634	Chrysoidine G, indicator	532-82-1
308507	Congo Red, indicator	573-58-0
448835	m-Cresol Purple sodium salt, indicator	62625-31-4
460017	Cresol Red, 98%, indicator	1733-12-6
568910	3,5-Dinitrobenzamide, 98%, indicator	121-81-3
101369	Ethyl Orange sodium salt, 92%, indicator	62758-12-7
266819	Hematoxylin, 90%, indicator	517-28-2
268529	Methyl Green, C.I. 42590, 90%, indicator	7114-03-6
116480	Methyl Red, indicator	493-52-7
985460	Methyl Yellow, indicator	60-11-7
196977	$\alpha$ -Naphtholphthalein, 98%, indicator	596-01-0
954442	Neutral Red, indicator	553-24-2
152721	Phenolphthalein, indicator	77-09-8
600238	Phenol Red, indicator	143-74-8
472860	Resazurin sodium salt, 90%, indicator	62758-13-8
354877	p-Rosolic acid, indicator	603-45-2
469727	3',3'',5',5''-Tetrabromophenolphthalein ethyl ester, 95%, indicator	1176-74-5
945374	Thymol Blue, indicator, ACS reagent	76-61-9
414947	Thymolphthalein, indicator	125-20-2
448486	p-Xylenol Blue, 95%, indicator	125-31-5

## ■ Complexometric Indicator

Cat. No.	Description	CAS
387805	Alizarin complexone, 98%	3952-78-1
966085	Ammonium thiocyanate, 98%, ACS reagent	1762-95-4

Cat. No.	Description	CAS
509293	Aurintricarboxylic acid ammonium salt, ATA	569-58-4
231472	Bathocuproine, BCP, 99%	4733-39-5
128045	Benzotriazole, 99%	95-14-7
141267	N-Benzoyl-N-phenylhydroxylamine, 98%	304-88-1
144477	2,2'-Bicinchoninic acid dipotassium salt hydrate, 98%	63451-34-3
107095	2,2'-Bipyridine, 99%	366-18-7
481193	2,2'-Biquinoline-4,4'-dicarboxylic acid, BCA, 98%	1245-13-2
500086	1,2-Bis(2-aminophenoxy)ethane-N,N,N',N'-tetraacetic acid, BAPTA, 97%	85233-19-8
566400	Black T, indicator	1787-61-7
159703	Calcein	1461-15-0
321443	Calconcarboxylic acid, indicator	3737-95-9
532400	o-Cresolphthalein complexone, indicator, ACS reagent	2411-89-4
173118	Cupferron, 98%, indicator	135-20-6
257173	trans-1,2-Diaminocyclohexane-N,N,N',N'-tetraacetic acid monohydrate, CYDTA, 98%	125572-95-4
293477	Diethylenetriaminepentaacetic acid, DTPA, 99%	67-43-6
415777	2,3-Dihydroxynaphthalene, 98%	92-44-4
966593	4,5-Dihydroxynaphthalene-2,7-disulfonic acid disodium salt dihydrate, 98%, ACS reagent	5808-22-0
351892	2,9-Dimethyl-1,10-phenanthroline hemihydrate, 98%	34302-69-7
315344	1,5-Diphenylcarbazine, 97.5%, ACS reagent	140-22-7
295717	4,7-Diphenyl-1,10-phenanthroline, 98.5%	1662-01-7
477323	Ethylenediaminetetraacetic acid, EDTA, 99%	60-00-4
168802	Ethylenediaminetetraacetic acid disodium salt dihydrate, 99%	6381-92-6
220565	Ethylenediaminetetraacetic dianhydride, 98%	23911-25-3
180796	3-Hydroxy-2-naphthoic acid, 98%	92-70-6
101228	3-Hydroxy-4-nitroso-2,7-naphthalenedisulfonic acid disodium salt, for analysis	525-05-3
189789	8-Hydroxyquinoline, 99%	148-24-3
510507	8-Hydroxyquinoline-5-sulfonic acid, 98%	84-88-8
328061	Luminol, 98%	521-31-3
342699	2-Mercaptobenzothiazole, 99%	149-30-4
132156	N-Methyliminodiacetic acid, MIDA, 99%	4408-64-4
218102	5-Methyl-1,10-phenanthroline, 98%	3002-78-6
441751	Methylthymol Blue sodium salt, MTB	1945-77-3
415304	Mordant Black 17, indicator	2538-85-4
623766	Morin hydrate, 90%	654055-01-3
254661	Murexide, indicator, ACS reagent	3051-09-0
289979	Naphthol Green B	19381-50-1
593866	4-(4-Nitrophenylazo)-1-naphthol	5290-62-0
979870	2,4-Pentanedione, 99%	123-54-6
272014	1,10-Phenanthroline-5,6-dione, 97%	27318-90-7
166728	1,10-Phenanthroline hydrochloride monohydrate, 99%	3829-86-5
102752	N-Phenylanthranilic acid, DPC, 99%	91-40-7
911115	Potassium ferricyanide(III), 99%, ACS reagent	13746-66-2

# Indicators

Cat. No.	Description	CAS
152412	Potassium thiocyanate, 99%	333-20-0
532325	3-(2-Pyridyl)-5,6-diphenyl-1,2,4-triazine, 99%	1046-56-6
135775	Salicylaldehyde, 99%	90-02-8
193542	Salicylic acid, 99%	69-72-7
235871	2-(4-Sulfophenylazo)chromotropic acid trisodium salt, SPADNS, indicator	23647-14-5
128844	5-Sulfosalicylic acid dihydrate, 99%	5965-83-3
489226	1,4,7,10-Tetraazacyclododecane-1,4,7,10-tetraacetic acid, DOTA, 97%	60239-18-1
557673	meso-Tetraphenylporphyrin, TPP, 97%	917-23-7
615694	5,10,15,20-Tetra(4-pyridyl)porphyrin, 97%	16834-13-2
318074	1,3,4-Thiadiazole-2,5-dithiol, 98%	1072-71-5
116125	2,4,6-Triallyloxy-1,3,5-triazine, 99%	101-37-1
478223	2,4,6-Tri(2-pyridyl)-1,3,5-triazine, 98.5%	3682-35-7
961897	Tropolone, 98%	533-75-5
416141	Xylenol Orange, XO, indicator	1611-35-4
993332	Zincon, indicator	62625-22-3

## ■ Adsorption Indicators

Cat. No.	Description	CAS
313292	Alizarin Red S, indicator	130-22-3
388665	4',5'-Dibromofluorescein, 95%, indicator	596-03-2
223219	2',7'-Dichlorofluorescein, indicator	76-54-0
276988	Diphenylamine, 99%	122-39-4
170182	Diphenylcarbazone, indicator	538-62-5
571461	Eosin Y disodium salt, dye content 85%, indicator	17372-87-1
487758	Fluorescein, indicator	2321-07-5
313050	Methyl Orange, indicator	547-58-0
151183	Rhodamine 6G, indicator	989-38-8
360553	Rose Bengal, 90%, indicator	632-69-9
253583	Tartrazine, indicator	1934-21-0
416140	Xylenol Orange tetrasodium salt, indicator	3618-43-7

## ■ Redox Indicators

Cat. No.	Description	CAS
153517	Barium diphenylamine-4-sulfonate, indicator, ACS reagent	6211-24-1
560079	3,3'-Dimethylbenzidine, 98%, indicator	119-93-7
941960	Dimethylglyoxime, indicator, ACS reagent	95-45-4
484031	N,N'-Diphenylbenzidine, 97%, indicator	531-91-9
117671	2-Nitrodiphenylamine, 99%, indicator	119-75-5
912281	1,10-Phenanthroline monohydrate, 99%, indicator, ACS reagent	5144-89-8
446811	Sodium diphenylamine-4-sulfonate, indicator	6152-67-6

■ Indicators for Nonaqueous Titration

Cat. No.	Description	CAS
179783	Crystal Violet, high purity biological stain	548-62-9
557297	$\alpha$ -Naphtholbenzein	145-50-6



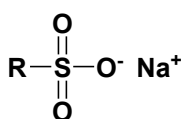
# Ion Pair Reagents for HPLC

Ion Pair Chromatography is widely used in pharmaceutical research and the separation, discovery and identification of biological substances.

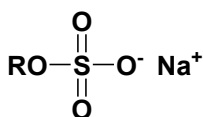
J&K provides multiple choices of alkylsulfonates in different carbon chain lengths for basic samples and quaternary ammonium salts for acidic samples.

- Ultra purity and excellent UV transparency
- Good performance in gradient HPLC
- Improved retention and separation
- Modified peak shape
- High reproducibility
- Customized packing

## ■ Alkylsulfonates for Basic Samples

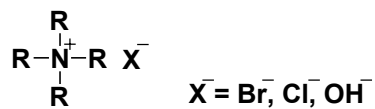


Cat. No.	Description	CAS
450637	1-Butanesulfonic acid sodium salt, 99%, for ion-pair chromatography	2386-54-1
239136	1-Butanesulfonic acid sodium salt monohydrate, 99%, for ion-pair chromatography	127791-51-9
551891	1-Decanesulfonic acid sodium salt, 99.5%, for ion-pair chromatography	13419-61-9
936782	1-Dodecanesulfonic acid sodium salt, 99%, for ion-pair chromatography	2386-53-0
243982	1-Heptanesulfonic acid sodium salt, 99.5%, for ion-pair chromatography	22767-50-6
998632	1-Heptanesulfonic acid sodium salt monohydrate, 99.5%, for ion-pair chromatography	207300-90-1
931254	1-Hexanesulfonic acid sodium salt, 99.5%, for ion-pair chromatography	2832-45-3
430819	1-Hexanesulfonic acid sodium salt monohydrate, 99.5%, for ion-pair chromatography	207300-91-2
456815	1-Nonanesulfonic acid sodium salt, 98%, for ion-pair chromatography	35192-74-6
194500	1-Octanesulfonic acid sodium salt, 99.5%, for ion-pair chromatography	5324-84-5
965647	1-Octanesulfonic acid sodium salt monohydrate, 99.5%, for ion-pair chromatography	207596-29-0
918085	1-Pentanesulfonic acid sodium salt, 99.5%, for ion-pair chromatography	22767-49-3
209188	1-Pentanesulfonic acid sodium salt monohydrate, 99.5%, for ion-pair chromatography	207605-40-1
192443	1-Propanesulfonic acid sodium salt, 99%, for ion-pair chromatography	14533-63-2
585348	1-Tridecanesulfonic acid sodium salt, 98%, for ion-pair chromatography	5802-89-1



Cat. No.	Description	CAS
911158	Decyl sodium sulfate, 99%, for ion-pair chromatography	142-87-0
953543	Dodecyl sodium sulfate, 99%, for ion-pair chromatography	151-21-3

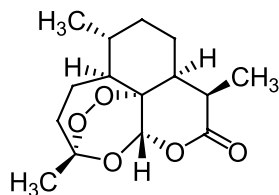
■ Quaternary Ammonium Salts for Acidic Samples



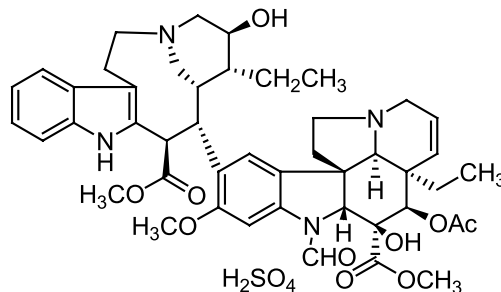
Cat. No.	Description	CAS
313378	Dihexylammonium acetate, 0.5 M solution in H <sub>2</sub> O, for ion-pair chromatography	366793-17-1
421783	Tetrabutylammonium bromide, 99%, for ion-pair chromatography	1643-19-2
510068	Tetrabutylammonium hydrogen sulfate, 99%, for ion-pair chromatography	32503-27-8
246758	Tetraethylammonium bromide, 99%, for ion-pair chromatography	71-91-0
174897	Tetraheptylammonium bromide, 99%, for ion-pair chromatography	4368-51-8
491317	Tetrapentylammonium bromide, 99%, for ion-pair chromatography	866-97-7

# Natural Products

Organic chemists and medicinal chemists have been interested in natural products for a long time. Natural products are the inspiration for about one half of the drugs approved by the U.S. Food and Drug Administration. Only about 5-15% of the approximately 250,000 species of higher plants and less than 1% of the microbial world (including marine organisms) have been systematically investigated chemically so far - this leaves vast untapped resources and illustrates the tremendous potential for development in the area of natural medicine.



Artemisinin  
949289



Vincristine sulfate  
594515

J&K provides a variety of natural products which are sourced from plants, animals and microorganisms.

## ■ Plant Extracts and Analogues

Cat. No.	Description	CAS
1415592	3-Acetylharpagide, 98%, from <i>Ajuga decumbens</i> Thunb.	6926-14-3
1388429	8-O-Acetyl shanzhiside methyl ester, 98%, from <i>Lamiophlomis rotata</i> (Benth. ex Hook.f.) Kudô	57420-46-9
221142	Alantolactone, 98%, from <i>Inula helenium</i> L.	546-43-0
348970	Albiflorin, 98%, from <i>Paeonia lactiflora</i> Pall.	39011-90-0
319910	Alisol acetate B, 98%, from <i>Alisma plantago-aquatica</i> Linn.	26575-95-1
380041	Aloe-emodine, 98%, from <i>Rheum palmatum</i> L.	481-72-1
485398	Andrographolide, 98%, from <i>Andrographis paniculata</i> (Burm.f.) Nees	5508-58-7
265833	trans-Anethole, 98.5%, from <i>Foeniculum vulgare</i> Mill.	4180-23-8
920308	Angelicin, 98%, from <i>Psoralea corylifolia</i> L.	523-50-2
475308	Artemisinin, 98%, from <i>Artemisia annua</i> L.	63968-64-9
993090	Asiaticoside, 98%, from <i>Centella asiatica</i> (L.) Urb.	16830-15-2
1210732	Asperosaponin VI, 98%, from Dipsacales	39524-08-8
967322	Aurantioobtusin, 98%, from <i>Cassia tora</i> L.	67979-25-3
1371307	(+)-Betulonic acid, 98%, from <i>Liquidambar formosana</i> Hance	4481-62-3
215791	(-)-Bilobalide, 98%, from <i>Ginkgo biloba</i> L.	33570-04-6
1415512	Calceolarioside B, 98%, from <i>Akebia quinata</i> (Houtt.) Decne.	105471-98-5
188526	Campesterol, 98%, from <i>Brassica chinensis</i> L.	474-62-4
196918	Capsaicin, 99%, from <i>Capsicum annum</i> L.	404-86-4
835081	Cardamonin, 98%, from <i>Alpinia katsumadae</i> Hayata	19309-14-9
448565	Carnosic acid, 99%, from <i>Rosmarinus officinalis</i> L.	3650-09-7
998115	β-Caryophyllene, 90%, from <i>Cinnamomum camphora</i> (L.) J. Presl	87-44-5
215792	Casticin, 98%, from <i>Vitex trifolia</i> Linn. var. <i>trifolia</i>	479-91-4
323860	Chicoric acid, 98%, from <i>Echinacea purpurea</i>	70831-56-0
1519185	Chikusetsusaponin IVA, 98%, from <i>Panax pseudoginseng</i> Wall. var. <i>japonicus</i> (C. A. Mey.) Hoo et Tseng	51415-02-2

Cat. No.	Description	CAS
211812	Chlorogenic acid, 98%, from <i>Eucommia ulmoides</i> Oliver	327-97-9
519828	Chrysophanic acid, 98%, from <i>Rheum palmatum</i> L.	481-74-3
237113	Cinobufagin, 98%, from cinobufagin venom toad	470-37-1
1415538	Complanatoside A, 98%, from <i>Astragalus complanatus</i> Bunge	146501-37-3
835083	Corynoline, 98%, from <i>Corydalis bungeana</i> Turcz.	18797-79-0
564163	Costunolide, 98%, from <i>Saussurea costus</i> (Falc.) Lipsch.	553-21-9
419652	Crategolic acid, 98%, from <i>Crataegus pinnatifida</i> Bunge	4373-41-5
160174	Crocin, 98%, from <i>Crocus sativus</i> L.	42553-65-1
610838	Crotonoside, 98%, from <i>Croton tiglium</i> L.	1818-71-9
980302	Cryptotanshinone, 98%, from <i>Salvia miltiorrhiza</i> Bunge	35825-57-1
205840	Cucurbitacin B, 98%, from <i>Cucumis melo</i> L.	6199-67-3
544741	Curculigoside, 98%, from <i>Curculigo orchoides</i> Gaertn.	85643-19-2
410534	Cyanidin-3-O-glucoside chloride, 98%, from <i>Glycine max</i> (L.) Merr.	7084-24-4
930366	Cyasterone, 98%, from <i>Cyathula officinalis</i> K.C. Kuan	17086-76-9
165212	Cycloamine, 98%, from <i>Veratrum californicum</i> Durand	4449-51-8
668783	(+)- $\alpha$ -Cyperone, 98%, from <i>Cyperus rotundus</i> L.	473-08-5
504130	Daphnetin, 98%, from <i>Daphne koreana</i>	486-35-1
134183	Deoxyschizandrin, 98%, from <i>Schisandra chinensis</i> (Turcz.) Baill.	61281-38-7
488337	Didymin, 98%, from <i>Melissa officinalis</i> L.	14259-47-3
116484	Dihydrocapsaicin, 98%, from <i>Capsicum annuum</i> L.	19408-84-5
549903	Dioscin, 98%, from <i>Dioscorea opposita</i> Thunb.	19057-60-4
1413230	Dipsacoside B, 98%, from <i>Lonicera confusa</i> (Sweet) DC.	33289-85-9
567394	Echinacoside, 98%, from <i>Cistanche deserticola</i> Y. C. Ma	82854-37-3
378849	Eleutheroside E, 98%, from <i>Acanthopanax senticosus</i> (Rupr. & Maxim.) Harms	39432-56-9
245421	Emodin, 95%, from <i>Rheum palmatum</i> L.	518-82-1
291945	(-)-Epigallocatechin gallate, EGCG, 98%, from Green Tea	989-51-5
385763	Eriocitrin, 98%, from lemon	13463-28-0
1369129	Esculentoside A, 98%, from <i>Phytolacca acinosa</i> Roxb.	65497-07-6
417407	Evodiamine, 98%, from <i>Evodia rutaecarpa</i> (Juss.) Benth.	518-17-2
226643	Fraxinellone, 98%, from <i>Dictamnus dasycarpus</i> Turcz.	28808-62-0
600374	Fucoxanthin, 98%, from <i>Laminaria japonica</i> Aresch	3351-86-8
210917	Gallic acid, 99%, from <i>Rhus chinensis</i> Mill.	149-91-7
531461	(-)-Gallocatechin, 98%, from Green Tea	3371-27-5
456567	Ganoderic acid A, 98%, from <i>Micromeria biflora</i> (Buch.-Ham. ex D. Don) Benth.	81907-62-2
174617	Geniposide, 98%, from <i>Gardenia jasminoides</i> J. Ellis	24512-63-8
555362	Genistin, 99%, from soybean	529-59-9
618995	Germacrone, 98%, from <i>Curcuma zedoaria</i> (Christm.) Rosc.	6902-91-6
121712	6-Gingerol, 98%, from <i>Zingiber officinale</i> Rosc.	23513-14-6
468466	Ginkgolide A, 98%, from <i>Ginkgo biloba</i> L.	15291-75-5
455843	Ginkgolide B, BN-52021, 98%, from <i>Ginkgo biloba</i> L.	15291-77-7
129800	Ginkgolide C, 98%, from <i>Ginkgo biloba</i> L.	15291-76-6
112127	Ginsenoside Rb1, 98%, from <i>Panax ginseng</i> C. A. Mey.	41753-43-9

# Natural Products



Cat. No.	Description	CAS
255036	Ginsenoside Rb3, 98%, from <i>Panax ginseng</i> C. A. Mey.	68406-26-8
130268	Ginsenoside Rc, 98%, from <i>Panax ginseng</i> C. A. Mey.	11021-14-0
139212	Ginsenoside Rf, 98%, from <i>Panax ginseng</i> C. A. Mey.	52286-58-5
172496	Ginsenoside Rg1, 98%, from <i>Panax ginseng</i> C. A. Mey.	22427-39-0
241376	$\beta$ -Glucosidase, from almonds $\geq 100$ u/g	9001-22-3
817490	4-O- $\beta$ -D-Glucosyl-5-O-methylvisamminol, 98%, from <i>Saposhnikovia divaricata</i> (Turcz.) Schischk.	84272-85-5
905352	Glycitin, 98%, from <i>Glycine max</i> (L.) Merr.	40246-10-4
560054	( $\pm$ )-Gossypol-acetic acid, 98%, from cotton seeds	12542-36-8
1415608	Griffonilide, 98%, from <i>Semiaquilegia adoxoides</i> (DC.) Makino	61371-55-9
437728	$\alpha$ -Hederin, 98%, from <i>Hedera nepalensis</i> K. Koch var. <i>sinensis</i> (Tobler) Rehder	27013-91-8
272968	Hesperidin, 97%, from <i>Citrus aurantium</i> L.	520-26-3
933132	Homoorientin, 98%, from <i>Polygonum orientale</i> L.	4261-42-1
114705	Honokiol, NSC 293100, 98%, from <i>Magnolia officinalis</i> Rehder & E. H. Wilson	35354-74-6
463213	Hordenine, 98%, from <i>D.tiliaefolium</i> G.Don	539-15-1
411836	Hupehenine, 98%, from fritillary	98243-57-3
550528	10-Hydroxycamptothecin, 98%, from <i>Taxus chinensis</i> (Plig.) Rehder	19685-09-7
234697	20-Hydroxyecdysone, 98%, from <i>Arachnoides</i> C. B. Clarke	5289-74-7
282902	Hypaconitine, 98%, from <i>Aconitum carnichaeli</i> Debeaux	6900-87-4
280911	Hyperoside, 98%, from <i>Abelmoschus manihot</i> (L.) Medic.	482-36-0
418642	Icariin, 98%, from <i>Epimedium brevicornu</i> Maxim.	489-32-7
795901	Isochlorogenic acid A, 98%, from <i>Lonicera japonica</i> Thunb.	2450-53-5
795900	Isochlorogenic acid B, 98%, from <i>Lonicera japonica</i> Thunb.	14534-61-3
516197	Isoquercitrin, 98%, from <i>Gossypium herbaceum</i> L.	482-35-9
817500	Isorhynchophylline, 98%, from <i>Uncaria rhynchophylla</i> (Miq.) Miq. ex Havil.	6859-01-4
241846	Jujuboside A, 98%, from <i>Ziziphus jujuba</i> Mill. var. <i>spinosa</i> (Bunge) Hu ex H. F. Chow	55466-04-1
201812	Kaempferol-3-O-rutinosid, 98%, from <i>Carthamus tinctorius</i> L.	17650-84-9
1210743	Levistilide A, 98%, from <i>Angelica sinensis</i> (Oliv.) Diels	88182-33-6
1210739	Liensinine diperchlorate, 98%, from <i>Nelumbo nucifera</i> Gaertn.	5088-90-4
449359	Ligustilide, 98%, from <i>Angelica sinensis</i> (Oliv.) Diels	4431-01-0
1210742	Ligustroflavone, 98%, from <i>Ligustrum lucidum</i> W.T.Aiton	260413-62-5
132030	Limonin, 98%, from <i>Evodia rutaecarpa</i> (Juss.) Benth.	1180-71-8
102857	Linarin, 98%, from <i>Dendranthema indicum</i> (L.) Des Moul.	480-36-4
286187	Linderane, 98%, from <i>Lindera aggregata</i> (Sims) Kosterm.	13476-25-0
1415605	Liriope muscari baily saponins C, 98%, from <i>Liriope spicata</i> Lour.	87480-46-4
1415607	Lithospermoside, 98%, from <i>Semiaquilegia adoxoides</i> (DC.) Makino	63492-69-3
668738	Lobetyolin, 98%, from <i>Codonopsis pilosula</i> (Franch.) Nannf.	136085-37-5
274653	Loganin, 98%, from <i>Strychnos nux-vomica</i> L.	18524-94-2
529153	Lupeol, 98%, from <i>Crataegus pinnatifida</i> Bunge	545-47-1
450815	Luteolin-7-O-D-glucopyranoside, 98%, from <i>Gentiana macrophylla</i> Pall.	5373-11-5
212491	Madecassic acid, 98%, from <i>Centella asiatica</i> (L.) Urb.	18449-41-7
242292	Madecassoside, 98%, from <i>Centella asiatica</i> (L.) Urb.	34540-22-2
314417	Magnolol, 98%, from <i>Magnolia officinalis</i> Rehder & E. H. Wilson	528-43-8

Cat. No.	Description	CAS
362404	Mangiferin, 98%, from <i>Mangifera persiciformis</i>	4773-96-0
397569	Mesaconitine, 98%, from <i>Aconitum carnichaeli</i> Debeaux	2752-64-9
1021473	Mogroside V, 98%, from <i>Siraitia grosvenorii</i> (Swingle) C. Jeffrey ex A. M. Lu & Zhi Y. Zhang	88901-36-4
117625	Mollugin, 98%, from <i>Rubia cordifolia</i> L.	55481-88-4
974864	Momordin IC, 98%, from <i>Kochia scoparia</i> (L.) Schrad.	96990-18-0
1371297	Monotropein, 98%, from <i>Monotropa uniflora</i> L.	5945-50-6
592132	Myricitrin, 98%, from <i>Myrica rubra</i> (Lour.) Sieb. & Zucc.	17912-87-7
150414	Narcissoside, 98%, from <i>Hedyotis chrysotricha</i>	604-80-8
817510	Narirutin, 98%, from <i>Citrus maxima</i> (Burm.) Merr.	14259-46-2
973185	Neohesperidin, 98%, from <i>Poncirus trifoliata</i> (L.) Raf.	13241-33-3
413917	Nitidine chloride, 98%, from <i>Zanthoxylum nitidum</i> (Roxb.) DC.	13063-04-2
1371314	Nodakenin, 98%, from <i>Angelica decursiva</i> (Miq.) Franch. & Sav.	495-31-8
481774	Nomilin, 98.5%, from Rutaceae	1063-77-0
1369152	Norisoboldine, 98%, from <i>Lindera aggregata</i> (Sims) Kosterm.	23599-69-1
1415611	Notoptero, 98%, from <i>Notopterygium incisum</i> C. T. Ting ex H. T. Chang	88206-46-6
470810	Nuciferine, 98%, from Lotus Leaf	475-83-2
776531	Obacunone, 98%, from <i>Dictamnus dasycarpus</i> Turcz.	751-03-1
117093	Oleanolic acid dihydrate, 98%, from <i>Hemsleya chinensis</i>	508-02-1
276279	Oridonin, 98%, from <i>Rabdosia rubescens</i> (Hemsl.) H. Hara	28957-04-2
306855	Orientin, 98%, from <i>Polygonum orientale</i> L.	28608-75-5
562408	Osthole, 98%, from <i>Cnidium monnieri</i> (L.) Cusson	484-12-8
164911	Oxymatrine, 98%, from <i>Sophora flavescens</i> Aiton	16837-52-8
485562	Paeoniflorin, 98%, from <i>Cynanchum otophyllum</i> C. K. Schneid.	23180-57-6
579849	Palmatine chloride, 98%, from <i>Coptis chinensis</i> Franch.	10605-02-4
552337	Parthenolide, 98%, from <i>Chrysanthemum morifolium</i>	20554-84-1
419255	Patchoulialcohol, 98%, from <i>Pogostemon cablin</i> (Blanco) Benth.	5986-55-0
1519204	Pectolarigenin, 98%, from <i>Cirsium japonicum</i> Fisch. ex DC.	520-12-7
297676	Peimine, 98%, from <i>Fritillaria cirrhosa</i> D. Don	23496-41-5
456979	Peiminine, 98%, from <i>Fritillaria cirrhosa</i> D. Don	18059-10-4
1189812	Peimisine, 98%, from <i>Fritillaria cirrhosa</i> D. Don	19773-24-1
202884	Peroxidase, from Horseradish, 200 units/mg	9003-99-0
1519412	Phellodendrine chloride, 98%, from <i>Phellodendron amurense</i> Rupr.	104112-82-5
295330	Phillyrin, 98%, from <i>Forsythia suspensa</i> (Thunb.) Vahl	487-41-2
993330	L- $\alpha$ -Phosphatidylcholine, 98%, from <i>Glycine max</i> (L.) Merr.	8002-43-5
498341	Picoside I, 98%, from <i>Picrorhiza scrophulariiflora</i> Pennel	27409-30-9
1210733	Plantamajoside, 98%, from <i>Plantago major</i> L.	104777-68-6
397871	Polydatin, 98%, from <i>Reynoutria japonica</i> Houtt.	27208-80-6
1519417	Polygalasaponin F, 98%, from <i>Polygala japonica</i> Houtt.	882664-74-6
1415543	Polygalaxanthone III, 98%, from <i>Polygala tenuifolia</i> Willd.	162857-78-5
633143	Polyphyllin I, 98%, from <i>Paris polyphylla</i> Smith var. <i>chinensis</i>	50773-41-6
632983	Praeruptorin A, 98%, from <i>Peucedanum praeruptorum</i> Dunn	73069-25-7
1415392	Praeruptorin B, 98%, from <i>Peucedanum praeruptorum</i> Dunn	81740-07-0

# Natural Products



Cat. No.	Description	CAS
973759	Prim-O-glucosylcimifugin, 98%, from <i>Cimicifuga foetida</i> L.	80681-45-4
209622	Protogracellin, 98%, from <i>Dioscorea opposita</i> Thunb.	102115-79-7
421927	Protopine, 98%, from <i>Corydalis yanhusuo</i> W. T. Wang ex Z. Y. Su & C. Y.	130-86-9
112084	Pseudoginsenoside F11, 98%, from <i>Panax ginseng</i> C. A. Mey.	69884-00-0
122452	Pseudolaric acid B, 98%, from <i>Pseudolarix amabilis</i> (J. Nelson) Rehder	82508-31-4
205174	Psoralen, 99%, from <i>Psoralea corylifolia</i> L.	66-97-7
970333	Puerarin, 98%, from <i>Pueraria edulis</i> Pamp.	3681-99-0
359683	Quercitrin, 98%, from <i>Albizia julibrissin</i> Durazz.	522-12-3
948392	Rebaudioside A, 97%, from <i>Steviarebaudiana</i>	58543-16-1
370469	Rhoifolin, 98%, from <i>Turpinia montana</i> (Bl.) Kurz.	17306-46-6
1369159	Roburic acid, 98%, from <i>Gentiana macrophylla</i> Pall.	6812-81-3
635972	Rosmarinic acid, 99%, from <i>Rosmarinus officinalis</i> L.	20283-92-5
505836	Ruscogenin, 98%, from <i>Ophiopogon japonicus</i> (Thunb.) Ker Gawl.	472-11-7
120938	Rutaecarpine, 98%, from <i>Evodia rutaecarpa</i> (Juss.) Benth.	84-26-4
1395318	Safflomin A, 98%, from <i>Carthamus tinctorius</i> L.	78281-02-4
413068	Saikosaponin A, 98%, from <i>Bupleurum chinense</i> DC.	20736-09-8
398460	Saikosaponin D, 98%, from <i>Bupleurum chinense</i> DC.	20874-52-6
106167	Salidroside, 98%, from <i>Rhodiola rosea</i> L.	10338-51-9
485476	Salvianolic acid A, 98%, from <i>Salvia miltiorrhiza</i> Bunge	96574-01-5
265943	Sanguinarine chloride, 98%, from <i>Macleaya cordata</i> (Willd.) R. Br.	5578-73-4
966210	Saponin, saponin content 60%, from <i>Camellia sinensis</i> (L.) Kuntze	8047-15-2
482689	Saponin, 98%, from <i>Tribulus terrestris</i> L.	8047-15-2
1415587	Schaftoside, 98%, from <i>Desmodium styracifolium</i> (Osbeck) Merr.	51938-32-0
405621	Schizandrin, 98%, from <i>Schisandra chinensis</i> (Turcz.) Baill.	7432-28-2
314338	Scopoletin, 98%, from <i>Morus alba</i> L.	92-61-5
489540	Shanzhiside methyl ester, 98%, from <i>Lamiophlomis rotata</i> (Benth. ex Hook.f.) Kudô	64421-28-9
295345	Shikonin, 99%, from <i>Lithospermum erythrorhizon</i> Sieb. & Zucc.	517-89-5
178923	Shionone, 98%, from <i>Aster tataricus</i> L.f.	10376-48-4
611490	Sipeimine, 98%, from <i>Fritillaria cirrhosa</i> D. Don	61825-98-7
184816	$\beta$ -Sitosterol, 98%, from <i>Zea mays</i> L.	83-46-5
1525271	Specnuezhenide, 98%, from <i>Ligustrum lucidum</i> W.T.Aiton	39011-92-2
347663	Stachydrine hydrochloride, 98%, from <i>Leonurus artemisia</i> (Lour.) S. Y. Hu	4136-37-2
916745	Stevioside, 80%, from <i>Stevia</i> sp.	57817-89-7
600341	Sweroside, 98%, from <i>Swertia bimaculata</i> (Sieb. & Zucc.) Hook.f. & Thoms. ex C. B. Clarke	14215-86-2
584096	Swertiamarin, 98%, from <i>Swertia bimaculata</i> (Sieb. & Zucc.) Hook.f. & Thoms. ex C. B. Clarke	17388-39-5
137848	Synephrine, 98%, from <i>Citrus aurantium</i> L.	94-07-5
287534	Tanshinone IIA, 97%, from <i>Salvia miltiorrhiza</i> Bunge	568-72-9
1415552	Tenacissoside H, 98%, from <i>Marsdenia tenacissima</i> (Roxb.) Wight et Arn.	191729-45-0
1519211	Tenuifolin, 98%, from <i>Polygala tenuifolia</i> Willd.	20183-47-5
293932	L-Tetrahydropalmatine hydrochloride, 98%, from <i>Corydalis yanhusuo</i> W. T. Wang ex Z. Y. Su & C. Y.	10097-84-4
968239	$\beta$ -Tocopherol, 98%, from Fortune windmillpalm petiole	16698-35-4
141656	D- $\alpha$ -Tocopherol, 98%, from <i>Trachycarpus fortunei</i>	59-02-9

Cat. No.	Description	CAS
212800	Toosendanin, 98%, from <i>Melia toosendan</i> Siebold & Zucc.	58812-37-6
511262	Trigonelline, 98%, from <i>Trigonella foenum-graecum</i> L.	535-83-1
186866	Triptolide, 98%, from <i>Tripterygium wilfordii</i> Hook.f.	38748-32-2
1519451	Tussilagone, 98%, from <i>Tussilago farfara</i> L.	104012-37-5
986496	Urease, from Jack bean, 2000 units/mg	9002-13-5
1415581	Vaccarin, 98%, from <i>Vaccaria segetalis</i> ( Neck.) Garcke	53452-16-7
169811	Verbascoside, 98%, from <i>Cistanche deserticola</i> Y. C. Ma	61276-17-3
594515	Vincristine sulfate, VCR, 98%, from <i>Catharanthus roseus</i> (L.) G. Don	2068-78-2
351421	Vindoline, 98%, from <i>Myrica rubra</i> (Lour.) Sieb. & Zucc.	2182-14-1
137309	Vitexin, 98%, from <i>Crataegus pinnatifida</i> Bunge	3681-93-4
626645	Wedelolactone, 98%, from <i>Wedelia chinensis</i> (Osbeck) Merr.	524-12-9
294946	Zein, 98%, from <i>Zea mays</i> L.	9010-66-6

## ■ Animal Extracts and Analogues

Cat. No.	Description	CAS
110685	Albumin, ≥80%, from chicken egg white	9006-59-1
109636	Albumin, BSA, 98%, from bovine serum	9048-46-8
115544	Arachidonic acid, AA, 99%, from porcine liver	506-32-1
962000	Catalase, from bovine liver, 2000-5000 units/mg	9001-05-2
545570	Cholesterol esterase, from porcine pancreas, 1960 units/g	9026-00-0
260074	Chondroitin sulfate sodium, 90%, from pork bone	9082-07-9
187067	α-Chymotrypsin, from bovine pancreas, 1000 units/mg	9004-07-3
231871	Deoxyribonuclease I, Dnase, from bovine pancreas, ≥2000 KU/mg	9003-98-9
188808	Deoxyribonucleic acid, 85%, from salmon testes	9007-49-2
502138	Deoxyribonucleic acid sodium salt, 85%, from calf thymus	73049-39-5
312586	Glycogen, from oyster	9005-79-2
419651	Heparin lithium salt, 170 units/mg, from porcine intestinal mucosa	9045-22-1
603870	Hyaluronidase, from bovine testes, 350 IU/mg	9001-54-1
927079	Hyaluronidase, from bovine testes, 500 IU/mg	37326-33-3
101259	Hydrolyzed collagen, from bovine achilles tendon, 1000 Da	9007-34-5
112706	(E)-10-Hydroxy-2-decenoic acid, 98%, from honey	14113-05-4
966406	Lipase, 30,000 U/mg, from porcine pancreas	9001-62-1
302969	Lysozyme, from chicken egg, ≥20,000 units/mg	12650-88-3
139924	Ribonuclease A, from bovine pancreas, 50 KU/mg	9001-99-4
493261	Superoxide dismutase, SOD, from bovine kidney, 2500 units/mg	9054-89-1
148407	Trypsin, from porcine pancreas, 1:250	9002-07-7

## ■ Microorganism Sources

Cat. No.	Description	CAS
477564	Aflatoxin B1, 98%, from <i>Aspergillus flavus</i>	1162-65-8
436424	Alcohol Dehydrogenase, ADH, from baker's yeast, 300 units/mg protein	9031-72-5



# Natural Products



Cat. No.	Description	CAS
536923	$\alpha$ -Amylase, from <i>Bacillus subtilis</i> , 2 units/mg protein	9000-90-2
546931	Amyloglucosidase, from <i>Aspergillus niger</i> , 100 IU/mg	9032-08-0
190303	Aphidicolin, 98%, from <i>Nigrospora oryzae</i>	38966-21-1
419469	Beauvericin, 99%, from <i>Beauveria bassiana</i>	26048-05-5
380473	Calcium ionophore A23187, 98%, from <i>Streptomyces chartreusis</i>	52665-69-7
167589	Cholesterol oxidase, from <i>E.coli</i> , $\geq 50$ units/mg protein	9028-76-6
986060	Citreoviridin, 97%, from <i>Penicillium citreoviride</i> biourge	25425-12-1
237689	Cyclopiazonic acid, CPA, 98%, from <i>Penicillium griseofulvum</i>	18172-33-3
391163	Cytochalasin B, 98%, from <i>Drechslera dematoidea</i>	14930-96-2
218358	Cytochalasin E, 99%, from <i>Aspergillus clavatus</i>	36011-19-5
570675	Fumonisin B1, 96%, from <i>Fusarium moniliforme</i>	116355-83-0
194759	Fumonisin B2, 98%, from <i>Fusarium moniliforme</i>	116355-84-1
573584	Geldanamycin, 99%, from <i>Streptomyces hygroscopicus</i> var <i>geldanus</i>	30562-34-6
454856	Gliotoxin, 99%, from <i>Gliocladium fimbriatum</i>	67-99-2
347740	Glucose Oxidase, from <i>Aspergillus niger</i> , 200 units/mg	9001-37-0
254121	Hygromycin B, 80%, from <i>Streptomyces hygroscopicus</i>	31282-04-9
605529	Invertase, from baker's yeast ( <i>S. cerevisiae</i> ), $\geq 200$ U/mg	9001-57-4
238105	Myriocin, 99%, from <i>Mycelia sterilia</i>	35891-70-4
400580	Nigericin sodium salt, 98%, from <i>Streptomyces hygroscopicus</i>	28643-80-3
325839	Oligomycin A, 99%, from <i>Streptomyces diastatochromogenes</i>	579-13-5
131761	Protease, from <i>Bacillus subtilis</i> , $\geq 150$ units/mg	9014-01-1
347354	Sarcosine oxidase, from <i>Bacillus</i> sp, 25 units/mg	9029-22-5
604770	Staurosporine, 98%, from <i>Streptomyces</i> sp.	62996-74-1
552112	Thapsigargin, 99%, from <i>Thapsia garganica</i>	67526-95-8
234589	Thiostrepton, 96%, from <i>Streptomyces</i> sp.	1393-48-2
227304	Valinomycin, 97%, from <i>Streptomyces fulvissimus</i>	2001-95-8
122263	Vancomycin hydrochloride, from <i>Streptomyces orientalis</i> , $\geq 900$ $\mu\text{g}/\text{mg}$	1404-93-9
140229	Zearalenone, 98%, from <i>Giberella zeae</i>	17924-92-4

# Amino Acids and Derivatives

Amino acids and derivatives are a class of biologically important organic compounds having both amino- and carboxy- units. In recent decades, there has been extensive research in various aspects of amino acids that has brought about high speed developments and widespread applications. Amino acids and their N-protected derivatives are utilized to synthesize various bioactive compounds including pharmaceutical intermediates, food additives and cosmetic materials.

As a professional supplier, J&K offers hundreds of amino acids and derivatives to meet your requirements from basic research to manufacturing.

## ■ Basic Amino Acids

Cat. No.	Description	CAS
100844	L-Alanine, 99%	56-41-7
118040	L-Arginine, 99%	74-79-3
458821	L-Asparagine, 99%	70-47-3
113968	L-Aspartic acid, 98%	56-84-8
911041	L-Cysteine, 99%	52-90-4
105489	L-Cystine, 99%	56-89-3
288636	L-Glutamic acid, 99%	56-86-0
160938	L-Glutamine, 99%	56-85-9
149332	Glycine, 98%	56-40-6
245730	L-Histidine, 98%	71-00-1
167203	L-Isoleucine, 99%	73-32-5
235041	L-Leucine, 99%	61-90-5
611898	L-Lysine, 98%	56-87-1
283889	L-Methionine, 99%	63-68-3
162943	L-Phenylalanine, 99%	63-91-2
132204	L-Proline, 99%	147-85-3
224753	L-Serine, 99%	56-45-1
131924	L-Threonine, 99%	72-19-5
231123	L-Tryptophan, 99%	73-22-3
185061	L-Tyrosine, 99%	60-18-4

## ■ C-Protected Amino Acids and Derivatives

Cat. No.	Description	CAS
269669	L-Cysteine methyl ester hydrochloride, 98%	18598-63-5
951338	L-Glu(OEt)-OEt·HCl, 98%	1118-89-4
104271	L-Glutamic acid dimethyl ester hydrochloride, 98%	23150-65-4
180122	Glycine ethyl ester hydrochloride, 98%	623-33-6
113358	Glycine methyl ester hydrochloride, 98%	5680-79-5
249046	H-His-OMe·2HCl, 97%	7389-87-9
251999	H-Leu-OMe·HCl, 99%	7517-19-3
176538	L-Phe-OMe·HCl, 98%	7524-50-7
117387	L-Pro-OMe hydrochloride, 98%	2133-40-6
421353	L-Serine methyl ester hydrochloride, 98%	5680-80-8
201413	L-Tryptophan methyl ester hydrochloride, 98%	7524-52-9
234900	L-Valine methyl ester hydrochloride, 99%	6306-52-1

# Amino Acids and Derivatives



## ■ N-Protected Amino Acids and Derivatives

Cat. No.	Description	CAS
114448	N-Acetyl-L-cysteine, LNAC, NAC, 99%	616-91-1
197393	N-Acetyl-L-glutamic acid, 99%	1188-37-0
156173	N-Acetylglycine, 99%	543-24-8
188646	N-Acetyl-L-phenylalanine, Ac-Phe-OH, 99%	2018-61-3
133138	N-Benzylglycine ethyl ester, 98%	6436-90-4
255723	Boc-alanine, 98%	3744-87-4
294650	N-Boc-L-aspartic acid, 98%	13726-67-5
148178	Boc-D-Leu-OH monohydrate, 98%	16937-99-8
161979	Boc-D-Phe-OH, 99%	18942-49-9
142527	Boc-L-Ser-OH, 99%	3262-72-4
562336	Boc-Ser-OMe, 95%	2766-43-0
248414	N-Boc-L-threonine, 99%	2592-18-9
273256	Boc-D-Trp-OH, 98%	5241-64-5
186023	Boc-L-Tyr-OH, 99%	3978-80-1
266707	N-(tert-Butoxycarbonyl)-L-tryptophan, 99%	13139-14-5
160266	N <sup>ε</sup> -Cbz-L-lysine, 98%	2212-75-1
140600	N <sup>ε</sup> -Fmoc-N <sup>ε</sup> -Boc-L-lysine, Fmoc-Lys(Boc)-OH, 98%	71989-26-9
117166	Fmoc-L-isoleucine, Fmoc-Ile-OH, 98%	71989-23-6
118239	Fmoc-L-isoleucine, Fmoc-Ile-OH, 99%	71989-23-6
199851	Fmoc-L-phenylalanine, Fmoc-L-Phe-OH, 98%	35661-40-6
155254	Fmoc-L-proline, Fmoc-Pro-OH, 98%	71989-31-6
100201	Fmoc-L-threonine, Fmoc-Thr-OH, 98.5%	73731-37-0
170766	Fmoc-Trp-OH, 98%	35737-15-6
502542	Z-Phe-OH, 98%	1161-13-3

## ■ Unusual Amino Acids

Cat. No.	Description	CAS
296502	D-Alanine, 99%	338-69-2
908068	2-Allylglycine, 98%	7685-44-1
238459	D-Arginine, 99%	157-06-2
257155	L-Arg(NO <sub>2</sub> )-OMe·HCl, L-NAME, 98%	51298-62-5
549655	D-Asparagine monohydrate, 99%	5794-24-1
135048	D-Aspartic acid, 99%	1783-96-6
522114	L-Citrulline, L-Cit-OH, 98%	372-75-8
500850	D-Cysteine, 98%	921-01-7
305081	4-Fluoro-L-phenylalanine, 98%	1132-68-9
150306	D-Glutamic acid, 99%	6893-26-1
253304	D-Glutamine, 98%	5959-95-5
225737	D-Histidine, 98%	351-50-8
115466	L-Homocysteine, 95%	6027-13-0
295174	D-(-)-4-Hydroxyphenylglycine, 99%	22818-40-2

# Amino Acids and Derivatives

Cat. No.	Description	CAS
461494	L-(+)-Norvaline, L-Nva-OH, 98%	6600-40-4
224017	D-Ornithine hydrochloride, 98%	16682-12-5
166395	L-Ornithine hydrochloride, 99%	3184-13-2
125942	D-Phenylalanine, 99%	673-06-3
249603	L-(+)- $\alpha$ -Phenylglycine, 99%	2935-35-5
211433	D-Proline, 99%	344-25-2
576420	L-Selenocystine, 98%	29621-88-3
462883	D-Serine, 98%	312-84-5
174003	L-Theanine, 99%	3081-61-6

## ■ Amino Alcohols

Cat. No.	Description	CAS
153144	D-Alaninol, 98%, ee: 97%	35320-23-1
292165	L-Alaninol, 98%	2749-11-3
207576	Alaninol, 98%	6168-72-5
541856	N-Boc-D-alaninol, 98%	106391-86-0
617586	Boc-D-phenylglycinol, 98%	102089-74-7
397463	N-Boc-L-valinol, 98%	79069-14-0
134326	N-tert-Butoxycarbonyl-L-prolinol, 98%	69610-40-8
917349	D-Leucinol, 98%	53448-09-2
298148	L-tert-Leucinol, 98%	112245-13-3
233896	D-Phenylalaninol, 98%	5267-64-1
143465	L-Phenylalaninol, 98%	3182-95-4
261112	(S)-(+)-2-Phenylglycinol, 98%	20989-17-7
125453	D-Phenylglycinol, 98%, ee: 99%	56613-80-0
477402	2-Phenylglycinol, 98%	7568-92-5
112675	L-(+)-Prolinol, 98%	23356-96-9
108048	L-Tryptophanol, 97%	2899-29-8
123299	L-Valinol, 98%, ee: 95%	2026-48-4

## ■ Other Amino Acids and Derivatives

Cat. No.	Description	CAS
609341	3,5-Diiodo-L-Tyr-OH, 98.5%	300-39-0
260603	L-Glutamic acid $\gamma$ -benzyl ester, 99%	1676-73-9
100705	H-Lys(Z)-OH, 98%	1155-64-2
421062	N-Methyl-D-aspartic acid, 98%	6384-92-5
133217	D-Pyroglutamic acid, 98%	4042-36-8
237425	Sarcosine, 99%	107-97-1
114587	L-Selenomethionine, 98%	3211-76-5
314842	Se-Methylseleno-L-cysteine, 98%	26046-90-2

# Bioactive Small-molecule Compounds



J&K Scientific as a professional supplier offers lots of high quality small-molecule compounds including inhibitors, agonist, activators and modulators. They are act on targets of important signaling pathways such as PI3K/Akt/mTOR, Apoptosis, Cell Cycle/DNA Damage, NF- $\kappa$ B, JAK/STAT, etc. All products will provide support for the research of the occurrence and development of diseases and their pathogenesis in pharmacology area.

## ■ PI3K/Akt/mTOR

Cat. No.	Description	CAS
1759176	A66, 98%, a potent and specific p110 $\alpha$ inhibitor	1166227-08-2
1386067	A769662, 98%	844499-71-4
155684	5-Aminoimidazole-4-carboxamide-1- $\beta$ -D-ribofuranoside, 98%	2627-69-2
369172	6-Amino-3-methylpurine, 3-MA, 90%	5142-23-4
1004472	Alpelisib, 98%, a potent and selective PI3K $\alpha$ inhibitor	1217486-61-7
1126271	AZD-8055, 98%	1009298-09-2
1239139	Buparlisib, 98%, a selective PI3K inhibitor	944396-07-0
1239104	CAL-101, 99%, a selective p110 $\delta$ inhibitor	870281-82-6
1018987	CHIR-99021, 98%	252917-06-9
623756	Everolimus, 95%	159351-69-6
1562554	Gedatolisib, 98%	1197160-78-3
460618	H-89 dihydrochloride, 98%, a potent and selective inhibitor of PKA	127243-85-0
114705	Honokiol, 98%, from <i>Houpoea officinalis</i>	35354-74-6
284107	2-Morpholino-8-phenylchromone, 98%	154447-36-6
1024276	Omipalisib, 98%, a highly selective and potent inhibitor of PI3K	1086062-66-9
334798	Phenformin hydrochloride, 98%	834-28-6
1232641	Pictilisib, 98%, a potent inhibitor of PI3K $\alpha/\delta$	957054-30-7
613609	SB 216763, 98%	280744-09-4
628156	Temsirolimus, 99%	162635-04-3
801141	Tetrabenazine, 99%, a VMAT-inhibitor	58-46-8
1239137	Torin 1, 98%	1222998-36-8
1239103	Torkinib, 98%	1092351-67-1
282611	Wortmannin, 98%, a multi-target inhibitor of PI3K and MLCK	19545-26-7
814294	Zotarolimus, 98%	221877-54-9

## ■ Protein Tyrosine Kinase

Cat. No.	Description	CAS
1232626	Afatinib, 99%	439081-18-2
597344	AG-490, 99%, an inhibitor of EGFR	133550-30-8
812864	Axitinib, 98%	319460-85-0
1019251	Crizotinib, 98%	877399-52-5
1020809	Dasatinib monohydrate, 99%	863127-77-9
413607	Delphinidin chloride, 97%	528-53-0
341249	Erlotinib, 98%	183321-74-6
993508	Imatinib, 98%	152459-95-5

# Bioactive Small-molecule Compounds



Cat. No.	Description	CAS
194937	Imatinib mesylate, 98%	220127-57-1
831262	Lapatinib, 98%	231277-92-2
795123	Lapatinib ditosylate, 98%	388082-77-7
981527	Pazopanib, 98%	444731-52-6
626116	SU 5416, 98%, a VEGFR2/Fik1 inhibitor	204005-46-9
381939	Sunitinib, 98%	557795-19-4
1020808	Sunitinib malate, 98%	341031-54-7
814262	Vandetanib, 99%	443913-73-3
1109982	Vatalanib dihydrochloride, 99%	212141-51-0

## ■ Angiogenesis

Cat. No.	Description	CAS
625920	Bosutinib, 98%	380843-75-4
923898	Dasatinib, 99%	302962-49-8
106898	Imiquimod, 99%, a toll-like receptor 7 agonist	99011-02-6
357211	Kanamycin sulfate	25389-94-0
906995	Nilotinib, 98%	641571-10-0
1239124	Ponatinib, 99%	943319-70-8
1349106	Ruxolitinib phosphate salt, 99%	1092939-17-7
1430418	Tofacitinib citrate, 99%	540737-29-9

## ■ Apoptosis

Cat. No.	Description	CAS
831900	ABT-737, 98%	852808-04-9
498651	Apoptosis Activator 2, 97%, a cytochrome c caspase activator and apoptosis inducer	79183-19-0
1831236	Birinapant, 98%	1260251-31-7
336187	Gambogic acid, 95%, a caspases activator	2752-65-0
190354	HA 14-1, 95%	65673-63-4
1416198	Nutlin-3, 98%	890090-75-2
800762	PAC-1, 98%, a procaspase-3 activator	315183-21-2
911951	Pomalidomide, 99%, an inhibitor of TNF- $\alpha$	19171-19-8
374892	Thalidomide, 98%	50-35-1
569067	Z-VAD-FMK, 99%, cell permeable, an irreversible pan-caspase inhibitor	187389-52-2

## ■ JAK/STAT

Cat. No.	Description	CAS
1648192	Afatinib dimaleate, BIBW2992, 99%	850140-73-7
384719	AG-1478, 97.5%, a selective EGFR inhibitor	153436-53-4
1525219	Dacomitinib, 98%, a potent irreversible ErbB inhibitor	1110813-31-4
955789	Fludarabine, 99%, a DNA synthesis and methylation inhibitor	21679-14-1

# Bioactive Small-molecule Compounds



Cat. No.	Description	CAS
1568587	Icotinib, 98%, a potent EGFR inhibitor	610798-31-7
996304	Neratinib, 99%, a highly selective HER2 and EGFR inhibitor	698387-09-6
1761088	Osimertinib, 98%, a potent and selective mutated forms EGFR inhibitor	1421373-65-0
1684920	Rociletinib, 98%	1374640-70-6
951485	Ruxolitinib, 99%	941678-49-5
9000042	TG-101348, 98%	936091-26-8
912849	Tofacitinib, CP 690550, 99%	477600-75-2
930465	WP1066, 98%, a novel inhibitor of JAK2 and STAT3	857064-38-1

## ■ MAPK

Cat. No.	Description	CAS
443310	Anisomycin, 99%, from Streptomyces griseolus	22862-76-6
957455	Asiaticoside, 98%	464-92-6
524508	Bosentan, 99%, a endothelin (ET) receptor antagonist	147536-97-8
1410144	Dabrafenib, 98%, a mutant BRAFV600 specific inhibitor	1195765-45-7
1833160	FR 180204, 98%, a potent and selective ATP-competitive inhibitor of ERK	865362-74-9
837005	PD0325901, 98%	391210-10-9
302058	PD98059, 98%, a non-ATP competitive MEK inhibitor	167869-21-8
593990	SB 202190, 98%	152121-30-7
176239	SB 203580, 98%	152121-47-6
1834602	SCH772984, 98%, a selective inhibitor of ERK1/2	942183-80-4
1189969	Selumetinib, AZD6244, 99%, a highly selective MEK1 inhibitor	606143-52-6
1239133	Trametinib, GSK1120212, 98%	871700-17-3
1349108	Vemurafenib, PLX4032, RG7204, 99%	918504-65-1

## ■ Cytoskeletal

Cat. No.	Description	CAS
1272662	Cabazitaxel, 99%	183133-96-2
181603	Docetaxel, 98%	114977-28-5
573584	Geldanamycin, 99%, from Streptomyces hygroscopicus var geldanus, a HSP90 inhibitor	30562-34-6
1761245	HSP990, 99%	934343-74-5
266725	(Z)-2-Methoxy-5-(3,4,5-trimethoxystyryl)phenol, CA4, 98%	117048-59-6
932649	Paclitaxel, 99.5%	33069-62-4
832430	PKC412	120685-11-2

## ■ Cell Cycle

Cat. No.	Description	CAS
101990	Fasudil hydrochloride, 98%	105628-07-7
1004546	SNS-032, 98.5%, a selective CDK2 inhibitor	345627-80-7
1417791	Y-27632 dihydrochloride, 98.5%, a selective ROCK1 (p160ROCK) inhibitor	129830-38-2

# Bioactive Small-molecule Compounds

## ■ TGF-beta/Smad

Cat. No.	Description	CAS
1239122	Galunisertib, LY2157299, 98%, a potent TGF- $\beta$ receptor I (T $\beta$ RI) inhibitor	700874-72-2
1833683	ML347, 98%	1062368-49-3
358596	Pirfenidone, 98%, an inhibitor for TGF- $\beta$ production and TGF- $\beta$ stimulated collagen	53179-13-8
2138662	Ripasudil (K-115), 98%, a highly selective and potent Rho-kinase inhibitor	887375-67-9
438815	SB 431542, 98%, a potent and selective inhibitor of ALK5	301836-41-9
1093812	SB 505124, 98%, a selective inhibitor of TGF- $\beta$ R for ALK4, ALK5	694433-59-5

## ■ DNA Damage

Cat. No.	Description	CAS
242090	Adenine, 99.5%	73-24-5
405632	Adenine hydrochloride, 98%	2922-28-3
382010	Adenine sulfate, 99%	321-30-2
161191	3-Aminobenzamide, 98%	3544-24-9
268355	2-Amino-6-purinethiol, 98%	154-42-7
150037	5-Azacytidine, 99%	320-67-2
339804	5-Aza-2'-deoxycytidine, 99%, a potent inhibitor of DNA methyltransferase	2353-33-5
308034	Belinostat, PXD101, 98%, a new type of HDAC inhibitor	414864-00-9
591713	Bendamustine hydrochloride, 98%, a DNA-damaging agent	3543-75-7
1831227	BG45, 98%, a HDAC class I inhibitor with selectivity for HDAC3	926259-99-6
579031	5-Bromo-2'-deoxyuridine, 99%	59-14-3
392078	Capecitabine, 99%	154361-50-9
274584	Carboplatin, 98%	41575-94-4
258050	2-Chloro-2'-deoxyadenosine, 2-CdA, 99%	4291-63-8
398914	Ciprofibrate, 99%, a PPAR $\alpha$ agonist	52214-84-3
330390	Clofarabine, 98%, a ribonucleotide reductase inhibitor	123318-82-1
349577	Cyclocytidine hydrochloride, 98%	10212-25-6
366272	Cytosine $\beta$ -D-arabinofuranoside, 99%, an antimetabolic agent and DNA synthesis inhibitor	147-94-4
308447	Dacarbazine, 97.5%	4342-03-4
792435	Daptomycin, 95%	103060-53-3
116557	Daunorubicin hydrochloride, 97%, inhibits both DNA and RNA synthesis	23541-50-6
241600	2'-Deoxy-5-fluorouridine, FUDR, 98%	50-91-9
275688	cis-Diamineplatinum(II) dichloride, cis-DDP, 99%, a DNA/RNA synthesis inhibitor	15663-27-1
113424	Doxorubicin hydrochloride, 98%, an antibiotic agent	25316-40-9
194237	Epirubicin hydrochloride, 98%	56390-09-1
114089	7-Ethyl-10-hydroxycamptothecin, SN-38, 99%	86639-52-3
320523	Etoposide, 98%	33419-42-0
180939	5-Fluorouracil, 99%	51-21-8
904475	Flupirtine maleate salt, 97%, a selective neuronal potassium channel opener, NMDA receptor antagonist	75507-68-5
271269	Gemcitabine hydrochloride, 99%	122111-03-9



# Bioactive Small-molecule Compounds



Cat. No.	Description	CAS
293018	Hydroxyurea, 98%	127-07-1
608272	Ifosfamide, 98%	3778-73-2
987783	Irinotecan hydrochloride trihydrate, 98%	136572-09-3
409544	6-Mercaptopurine monohydrate, 98.5%, a DNA/RNA synthesis inhibitor	6112-76-1
274238	2-Methyl-5-nitro-1-imidazole ethanol, 99%	443-48-1
289285	Mitoxantrone hydrochloride, 99%	70476-82-3
525549	Mizoribine, 98%, a DNA/RNA synthesis inhibitor	50924-49-7
125841	Nicotinamide, 98%	98-92-0
251696	Oxaliplatin, 95%, a DNA/RNA synthesis inhibitor	61825-94-3
2138654	Quisinostat 2HCl, 98%, a new type HDAC inhibitor	875320-31-3
259196	Resveratrol, 98%	501-36-0
588536	Rifampicin, 98%	13292-46-1
1004535	Romidepsin, 98%, a potent HDAC1 and HDAC2 inhibitor	128517-07-7
1239125	Silmitasertib, CX-4945, 98%, a potent and selective ATP-competitive CK2 inhibitor	1009820-21-6
245478	Sodium phenylbutyrate, 98%, a histone deacetylase inhibitor	1716-12-7
563738	Teniposide, 98%	29767-20-2
515848	1-(2-Tetrahydroformyl)-5-fluorouracil, 98%	17902-23-7
303595	Trichostatin A, 98%, from Streptomyces sp.	58880-19-6
552943	Trifluorothymidine, 98%	70-00-8
1564431	Tubastatin A HCl, TSA HCl, 98%, a potent and selective HDAC6 inhibitor	1310693-92-5
399796	Uridine, 99%	58-96-8

## ■ Neuronal Signaling

Cat. No.	Description	CAS
298969	Acetylsalicylic acid, 99%, an irreversible COX1 and COX2 inhibitor	50-78-2
407698	1-Adamantanamine hydrochloride, 99%, antiviral and antiparkinsonian compound	665-66-7
296982	Amitriptyline hydrochloride, 98%, a dibenzocycloheptene-derivative tricyclic antidepressant (TCA)	549-18-8
163651	(+)-Bicuculline, 99.5%, a GABAA antagonist	485-49-4
102648	Carprofen, 98%, a COX2 inhibitor	53716-49-7
153710	Chlorpheniramine maleate, 99%, a histamine H1 receptor antagonist	113-92-8
266846	Cimetidine, SKF-92334, 99%	51481-61-9
286160	DAPT, 98%, a $\gamma$ -secretase inhibitor	208255-80-5
302490	Diphenhydramine hydrochloride, 99%, a histamine H1 antagonist	147-24-0
260381	Domperidone, 98%, dopamine blocker and an antidopaminergic reagent	57808-66-9
340964	Doxazosin mesylate, 98%	77883-43-3
365552	Duloxetine hydrochloride, 99%	136434-34-9
317177	Escitalopram oxalate, 98%, a selective serotonin reuptake inhibitor	219861-08-2
249233	Etodolac, 98%, a COX inhibitor	41340-25-4
116850	Etomidate, 99%, a GABAA receptors agonist	33125-97-2
285174	Flavoxate hydrochloride, 99%, a muscarinic AChR antagonist	3717-88-2
1833092	FLI-06, 98%, a notch signaling and the early secretory pathway inhibitor	313967-18-9
360854	Fluvoxamine maleate, 98%, a selective serotonin (5-HT) reuptake inhibitor (SSRI)	61718-82-9

# Bioactive Small-molecule Compounds



Cat. No.	Description	CAS
311700	Gabapentin, 98%, GABA analogue	60142-96-3
358978	Glycopyrrolate, 98%	596-51-0
384285	Granisetron hydrochloride, 98%, a serotonin 5-HT <sub>3</sub> receptor antagonist	107007-99-8
277872	Histamine dihydrochloride, 98%, a histamine receptor agonist	56-92-8
382196	Histamine diphosphate hydrate, 98%, a histamine H <sub>1</sub> /H <sub>2</sub> receptor agonist	51-74-1
408218	Ibuprofen, 98%, an anti-inflammatory inhibitor targeting COX-1 and COX-2	15687-27-1
474412	Indomethacin, 98%, a nonselective COX1 and COX2 inhibitor	53-86-1
115511	Levodopa, 99%, a natural form of DOPA	59-92-7
338442	Loratadine, 98%, a highly potent selective H <sub>1</sub> receptor antagonist	79794-75-5
1386280	LY411575, 98%, a $\gamma$ -secretase inhibitor	209984-57-6
217197	Meloxicam, 99%, a selective COX inhibitor	71125-38-7
421062	N-Methyl-D-aspartic acid, 98%	6384-92-5
434183	Naftopidil, 98%, a selective $\alpha$ <sub>1</sub> -adrenergic receptor antagonist	57149-07-2
163255	Neostigmine bromide, 98%, a reversible acetylcholinesterase inhibitor	114-80-7
1238183	Noopept, 99%	157115-85-0
156717	Olopatadine hydrochloride, 99%, a selective H <sub>1</sub> receptor antagonist	140462-76-6
323878	Oxaprozin, 98%, pancreatic and gastric lipase inhibitor and caspase-3 activator	21256-18-8
235435	Penfluridol, 97%	26864-56-2
300598	Phentolamine methanesulfonate salt, 98%, a nonselective alpha-adrenergic antagonist	65-28-1
458307	Piroxicam, 98%, a non-selective COX inhibitor	36322-90-4
372427	Promethazine hydrochloride, 98%, a potent histamine H <sub>1</sub> receptor antagonist	58-33-3
321078	Quetiapine hemifumarate salt, 98%, an inhibitor of D <sub>2</sub> DR and SR-2A	111974-72-2
462968	Racecadotril, 98%, a potent enkephalinase inhibitor	81110-73-8
193542	Salicylic acid, 99%	69-72-7
157728	Serotonin hydrochloride, 97.5%, a monoamine neurotransmitter and endogenous 5-HT receptor agonist	153-98-0
211388	Sodium valproate, 98%, a HDAC inhibitor	1069-66-5
433895	Sulindac, 98%, a COX inhibitor	38194-50-2
144809	Sumatriptan succinate, 98%, a 5-HT <sub>1</sub> receptor agonist	103628-48-4
408413	Tropicamide, 99%, a potent selective M <sub>4</sub> antagonist	1508-75-4
146177	Venlafaxine hydrochloride, 98%, an arylalkanolamine serotonin-norepinephrine reuptake inhibitor (SNRI)	99300-78-4
304079	Xylometazoline hydrochloride, 98%, a $\alpha$ -Adrenoceptor agonist	1218-35-5
186095	Ziprasidone hydrochloride monohydrate, 99%, a novel and potent dopamine and serotonin (5-HT) receptor antagonist	138982-67-9
377186	Zolmitriptan, 98%, a selective 5-HT <sub>1B/1D/1F</sub> receptor agonist	139264-1

## ■ NF- $\kappa$ B

Cat. No.	Description	CAS
236213	5-Aminosalicylic acid, 5-ASA, 98.5%, an NF- $\kappa$ B and PGDH inhibitor	89-57-6
157946	Bay 11-7085, 98%	196309-76-9
542006	Caffeic acid phenethyl ester, CAPE, 99%, a protein tyrosine kinase and ornithine decarboxylase inhibitor	104594-70-9

# Bioactive Small-molecule Compounds



## ■ Stem Cells and Wnt

Cat. No.	Description	CAS
1018987	CHIR-99021, CT99021, 98%	252917-06-9
286160	DAPT, 98%, a $\gamma$ -secretase inhibitor	208255-80-5
101990	Fasudil hydrochloride, 98%	105628-07-7
1432878	FH535, 98%, a cell-permeable compound that inhibits Wnt/ $\beta$ -catenin and PPAR	108409-83-2
1833092	FLI-06, 98%, a notch signaling and the early secretory pathway inhibitor	313967-18-9
955789	Fludarabine, 99%, a DNA synthesis and methylation inhibitor	21679-14-1
1386280	LY411575, 98%, a $\gamma$ -secretase inhibitor	209984-57-6
1349106	Ruxolitinib phosphate salt, 99%	1092939-17-7
1430418	Tofacitinib citrate, 99%	540737-29-9

## ■ GPCR and G Protein

Cat. No.	Description	CAS
506507	Atomoxetine hydrochloride, 99%, a selective norepinephrine reuptake inhibitor	82248-59-7
353601	Bambuterol hydrochloride, 98%, a long acting beta-adrenoceptor agonist (LABA)	81732-46-9
153710	Chlorpheniramine maleate, 99%, a histamine H1 receptor antagonist	113-92-8
278434	Cyclobenzaprine hydrochloride, 98%, a peripherally-acting AAAD or DOPA decarboxylase inhibitor	6202-23-9
302490	Diphenhydramine hydrochloride, 99%, a histamine H1 antagonist	147-24-0
325837	Dobutamine hydrochloride, 98%	49745-95-1
260381	Domperidone, 98%, dopamine blocker and an antidopaminergic reagent	57808-66-9
365552	Duloxetine hydrochloride, 99%	136434-34-9
317177	Escitalopram oxalate, 98%, a selective serotonin reuptake inhibitor	219861-08-2
360854	Fluvoxamine maleate, 98%, a selective serotonin (5-HT) reuptake inhibitor (SSRI)	61718-82-9
384285	Granisetron hydrochloride, 98%, a serotonin 5-HT <sub>3</sub> receptor antagonist	107007-99-8
574461	Ketotifen fumarate salt, 99%, H <sub>1</sub> -antihistamine and mast cell stabilizer	34580-14-8
115511	Levodopa, 99%, a natural form of DOPA	59-92-7
338442	Loratadine, 98%, a highly potent selective H1 receptor antagonist	79794-75-5
434183	Naftopidil, 98%, a selective $\alpha$ 1-adrenergic receptor antagonist	57149-07-2
770912	Nebivolol hydrochloride, 98%, a selective $\beta$ 1 antagonist	152520-56-4
496697	Olanzapine, 99%, a high affinity for 5-HT <sub>2</sub> serotonin and D <sub>2</sub> dopamine receptor antagonist	132539-06-1
156717	Olopatadine hydrochloride, 99%, a selective H1 receptor antagonist	140462-76-6
977215	Paliperidone, 99%, a potent D <sub>2</sub> and 5-HT <sub>2A</sub> antagonist	144598-75-4
235435	Penfluridol, 97%	26864-56-2
993174	Plerixafor, AMD3100, 99%	110078-46-1
372427	Promethazine hydrochloride, 98%, a potent histamine H1 receptor antagonist	58-33-3
321078	Quetiapine hemifumarate salt, 98%, an inhibitor of D <sub>2</sub> DR and SR-2A	111974-72-2
462968	Racecadotril, 98%, a potent enkephalinase inhibitor	81110-73-8
157728	Serotonin hydrochloride, 97.5%, a monoamine neurotransmitter and endogenous 5-HT receptor agonist	153-98-0
519766	(S)-(-)-Sulpiride, 98%, a selective antagonist for D <sub>2</sub> dopamine receptor	23672-07-3
144809	Sumatriptan succinate, 98%, a 5-HT <sub>1</sub> receptor agonist	103628-48-4
522188	Tropisetron monohydrochloride, 99%, 5-HT <sub>3</sub> receptor antagonist and $\alpha$ 7-nicotinic receptor agonist	105826-92-4

# Bioactive Small-molecule Compounds

Cat. No.	Description	CAS
304079	Xylometazoline hydrochloride, 98%, $\alpha$ -Adrenoceptor agonist	1218-35-5
377186	Zolmitriptan, 98%, a selective 5-HT <sub>1B/1D/1F</sub> receptor agonist	139264-17-8

## ■ Endocrinology and Hormones

Cat. No.	Description	CAS
127998	Benazepril hydrochloride, 98.5%, an angiotensin-converting enzyme (ACE) inhibitor	86541-74-4
480986	Betamethasone, 98%	378-44-9
161078	Betamethasone dipropionate, 97%	5593-20-4
956180	Bicalutamide, 99%	90357-06-5
240627	Candesartan cilexetil, 98%, an ATR antagonist	145040-37-5
237181	Captopril, 98%, an angiotensin-converting enzyme (ACE) inhibitor	62571-86-2
326290	Clobetasol for peak identification, 98%	25122-46-7
410760	Cyproterone acetate, 98%, an androgen receptor (AR) antagonist	427-51-0
906826	Deflazacort, 99%	14484-47-0
580148	Enalapril maleate, 98%, an angiotensin converting enzyme inhibitor	76095-16-4
1239111	Enzalutamide, 99%	915087-33-1
505041	$\beta$ -Estradiol 17-cypionate, 98%, an ET-1 inhibitor	313-06-4
238587	Ethisterone, 98%, a progestogen hormone being considered to treat prostate cancer	434-03-7
425563	17 $\alpha$ -Ethinylestradiol, 98%, an orally bio-active estrogen	57-63-6
535202	Finasteride, 98%, an orally active testosterone 5-alpha-reductase inhibitor	98319-26-7
580503	Flutamide, 98%, an androgen receptor antagonist	13311-84-7
917459	Fluticasone propionate, 98%	80474-14-2
960385	Hydrocortisone, 98%	50-23-7
562762	Irbesartan, 99%, a highly potent and specific angiotensin II type 1 (AT <sub>1</sub> ) receptor antagonist	138402-11-6
138498	Medroxyprogesterone acetate, 99%	71-58-9
535697	Megestrol acetate, 98%	595-33-5
427600	Mifepristone, 98%	84371-65-3
371009	Mometasone furoate, 98%	83919-23-7
462968	Racecadotril, 98%, a potent enkephalinase inhibitor	81110-73-8
206013	Valsartan, 99%, a nonpeptide angiotensin II AT <sub>1</sub> receptor antagonist	137862-53-4

## ■ Metabolism

Cat. No.	Description	CAS
298969	Acetylsalicylic acid, 99%, an irreversible COX1 and COX2 inhibitor	50-78-2
213579	Bezafibrate, 98%	41859-67-0
442315	Cilostazol, 99%	73963-72-1
398914	Ciprofibrate, 99%, a PPAR $\alpha$ agonist	52214-84-3
261815	Clarithromycin, 95%, a macrolide antibiotic and a CYP3A4 inhibitor	81103-11-9
125517	Dipyridamole, 98%, a phosphodiesterase inhibitor	58-32-2
316179	Fenofibrate, 99%	49562-28-9
491437	Fenofibric acid, 99%	42017-89-0

# Bioactive Small-molecule Compounds



Cat. No.	Description	CAS
441139	Gimeracil, 99%	103766-25-2
599400	Glycyrrhizic acid, 98%, from Glycyrrhiza uralensis Fisch.	1405-86-3
312460	3-Isobutyl-1-methylxanthine, 99%	28822-58-4
189219	Lovastatin, 97%	75330-75-5
161885	Methocarbamol, 99%, a central muscle relaxant	532-03-6
476082	Mevastatin, 98%, a potent HMG-CoA reductase inhibitor	73573-88-3
101318	Mycophenolate mofetil, 98%, a reversible inhibitor of (IMPDH1/2)	128794-94-5
323878	Oxaprozin, 98%, a pancreatic and gastric lipase inhibitor and caspase-3 activator	21256-18-8
538904	Ozagrel hydrochloride hydrate, 99%, a selective thromboxane A(2) synthetase inhibitor	78712-43-3
506589	Pioglitazone hydrochloride, 99%, a receptor-gamma (PPARgamma) agonist	112529-15-4
382187	Pravastatin sodium, 98%, a HMG-CoA reductase inhibitor	81131-70-6
961027	Retinoic acid, 98.5%	302-79-4
280414	Rolipram, 98%, a PDE4 inhibitor	61413-54-5
591123	Tetraethylthiuram disulfide, TETD, 97%, an acetaldehyde dehydrogenase (ALDH1) inhibitors	97-77-8
494464	Topiramate, 99%, an antagonist of GluR5 receptor and a modulator of GABA receptor	97240-79-4
211190	Triamcinolone acetonide, 98%	76-25-5
552812	Trilostane, 99%	13647-35-3
942087	Voriconazole, 98%, a potent and broad-spectrum anti-fungal agent	137234-62-9

## ■ Transmembrane Transporters

Cat. No.	Description	CAS
163651	(+)-Bicuculline, 99.5%, a GABAA antagonist	485-49-4
927378	Cilnidipine, 99%	132203-70-4
365720	5,5-Diphenylhydantoin sodium salt, 98%, a potent multi-channel blocker	630-93-3
116850	Etomidate, 99%, a GABAA receptors agonist	33125-97-2
360407	Felodipine, 98%, a selective L-type Ca <sup>2+</sup> channel blocker	72509-76-3
206632	Gliquidone, 98%, an anti-diabetic compound	33342-05-1
422558	Glyburide, 98%	10238-21-8
117042	1-Hydrazinophthalazine hydrochloride, 99%, direct-acting vasodilator	304-20-1
185928	Lamotrigine, 98%, a novel anticonvulsant drug for inhibition of 5-HT	84057-84-1
952517	lansoprazole, 98%, a proton pump inhibitor	103577-45-3
617059	Levetiracetam, 98%	102767-28-2
211222	Lomerizine dihydrochloride, 99%, new L- and T-type calcium channel blocker used in the treatment of migraine	101477-54-7
586681	Nateglinide, 98%, insulin secretagog agent, K <sup>+</sup> channel blocker	105816-04-4
967037	Nicorandil, 98%, a potassium channel activator	65141-46-0
307439	Nifedipine, 98%, a potent vasodilator agent with calcium antagonistic action	21829-25-4
488698	Nimodipine, 99%, analogue of the calcium channel blocker nifedipine	66085-59-4
178077	Omeprazole, 98%, a proton pump inhibitor	73590-58-6
179837	Primidone, 99%, a GABAB receptor agonist	125-33-7
222133	Ranolazine dihydrochloride, 98%, metabolic modulator and membrane stabilizer, anti-ischemic agent	95635-56-6
586080	Riboflavin 5'-monophosphate sodium salt, FMN-Na, 73.0 - 79.0% fluorimetric	130-40-5

## Bioactive Small-molecule Compounds

Cat. No.	Description	CAS
786133	Rufinamide, 98%, sodium channel blocker	106308-44-5
814142	Strontium ranelate, 98%, antiosteoporotic agent	135459-87-9
455364	Tetracaine hydrochloride, 98%, a potent local anaesthetic and a channel function allosteric inhibitor	136-47-0
107868	Verapamil hydrochloride, 98%, L-type Ca <sup>2+</sup> channel blocker	152-11-4
143569	Vinpocetine, 98%, a selective inhibitor for PDE1	42971-09-5

### ■ Autophagy

Cat. No.	Description	CAS
413607	Delphinidin chloride, 97%	528-53-0
101990	Fasudil hydrochloride, 98%	105628-07-7
257998	Metformin hydrochloride, 98%, an AMPK activator	1115-70-4
298251	Temozolomide, 98%	85622-93-1
1239137	Torin 1, 98%	1222998-36-8
326356	Trifluoperazine dihydrochloride, 99%, a cell-permeable calmodulin antagonist	440-17-5

# Buffers



Buffers perform a very important function in the field of biochemical research. J&K offers a broad range of buffers to meet your research and manufacturing needs. You can count on J&K for

- Reliable quality and lot-to-lot consistency
- Requirement specific capability
- Laboratory to industrial scale quantities
- Customized packaging availability

Cat. No.	Description	CAS
103822	ACES, 99%	7365-82-4
207239	N-(2-Acetamido)iminodiacetic acid, ADA, 99%	26239-55-4
563365	2-Amino-2-methyl-1,3-propanediol, AMPD, 99%	115-69-5
386206	2-Amino-2-methyl-1-propanol, AMP, 95%	124-68-5
908477	2-Amino-2-methyl-1-propanol, AMP, 98%	124-68-5
944664	Ammonium acetate, 98%, for analysis	631-61-8
353326	Ammonium tartrate, 99%	3164-29-2
583550	Bicine, 99%	150-25-4
249425	N,N-Bis(2-hydroxyethyl)-2-aminoethanesulphonic acid, BES, 99%	10191-18-1
228296	3-[N,N-Bis(2-hydroxyethyl)amino]-2-hydroxypropanesulfonic acid, 99%	68399-80-4
365989	2,2-Bis(hydroxymethyl)-2,2',2''-nitrilotriethanol, BIS-TRIS, 99%	6976-37-0
469730	BIS-TRIS hydrochloride, 99%	124763-51-5
556007	1,3-Bis[tris(hydroxymethyl)methylamino]propane, 99%	64431-96-5
905956	Boric acid, 99.5%, ACS reagent	10043-35-3
921828	Boric acid, 99.99%, extra pure	10043-35-3
477315	BES sodium salt, 99%	66992-27-6
155014	CAPSO sodium salt, 98%	102601-34-3
1880610	CE-SDS buffer, for capillary electrophoresis	N/A
947677	Citric acid, 98%, anhydrous	77-92-9
434333	N-Cyclohexyl-2-aminoethanesulfonic acid, CHES, 99%	103-47-9
382316	3-(Cyclohexylamino)-2-hydroxy-1-propanesulfonic acid, CAPSO, 99%	73463-39-5
400408	N-Cyclohexyl-3-aminopropanesulfonic acid, CAPS, 99%	1135-40-6
374184	EPPS, 99%	16052-06-5
477323	Ethylenediaminetetraacetic acid, EDTA, 99%	60-00-4
168802	Ethylenediaminetetraacetic acid disodium salt dihydrate, 99%	6381-92-6
257614	Glycylglycine, 99%	556-50-3
573941	HEPES hemisodium salt, 99%	103404-87-1
573942	HEPES sodium salt, 99%	75277-39-3
124541	N-(2-Hydroxyethyl)piperazine-N'-(4-butanesulfonic acid), HEPBS, 99%	161308-36-7
502280	4-(2-Hydroxyethyl)piperazine-1-ethanesulfonic acid, HEPES, 99%	7365-45-9
431648	4-(2-Hydroxyethyl)piperazine-1-(2-hydroxypropane-3-sulfonic acid), 98%	68399-78-0
149443	Imidazole, 99%	288-32-4
148977	L-(+)-Lactic acid, 90%	79-33-4
573897	Maleic acid, 99%	110-16-7
615320	MES sodium salt, 99%	71119-23-8
122040	MOPS sodium salt, 99.5%	71119-22-7

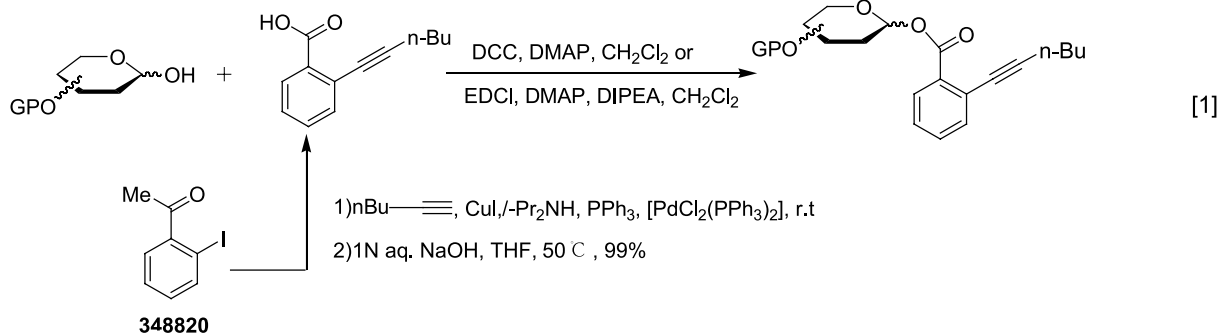
Cat. No.	Description	CAS
100282	2-(N-Morpholino)ethanesulfonic acid, MES, 99%	4432-31-9
284155	2-(N-Morpholino)ethanesulfonic acid monohydrate, MES monohydrate , 99%	145224-94-8
174778	3-(N-Morpholino)-2-hydroxy-1-propanesulfonic acid, MOPSO, 99%	68399-77-9
424745	Piperazine-1,4-bis(2-ethanesulfonic acid) monosodium salt, PIPES sodium salt , 99%	10010-67-0
207631	Piperazine-N,N'-bis-2-ethanesulphonic acid, PIPES, 99%	5625-37-6
481977	PIPES disodium salt, 98%	76836-02-7
352518	PIPES sesquisodium salt, 99%	100037-69-2
991468	Potassium chloride, 99%, extra pure	7447-40-7
900196	Potassium dihydrogen phosphate, 99%, ACS reagent	7778-77-0
128839	Potassium dihydrogen phosphate, 99%, extra pure	7778-77-0
583341	Potassium phosphate dibasic trihydrate, 99%	16788-57-1
236306	Potassium phosphate tribasic, 98.5%	7778-53-2
193542	Salicylic acid, 99%	69-72-7
988100	Sodium acetate, 99%, anhydrous, for analysis	127-09-3
902777	Sodium acetate trihydrate, 99%, for analysis	6131-90-4
988639	Sodium bicarbonate, 99.7%, ACS reagent	144-55-8
191558	Sodium carbonate, 99.5%, anhydrous	497-19-8
971431	Sodium chloride, 99%, ACS reagent	7647-14-5
106285	Sodium diacetate hydrate	126-96-5
938365	Sodium dihydrogen phosphate, 99%	7558-80-7
253653	Sodium dihydrogen phosphate, 99%, anhydrous, ACS reagent	7558-80-7
908501	Sodium dihydrogen phosphate monohydrate, 98%, ACS reagent	10049-21-5
918253	Sodium dihydrogen phosphate monohydrate, 98%, for analysis	10049-21-5
117840	Sodium DL-lactate solution, 60% w/w in H <sub>2</sub> O	72-17-3
441909	Sodium phosphate dibasic heptahydrate, 98%, for analysis	7782-85-6
987159	Sodium pyrophosphate decahydrate, TSPP, 99%, ACS reagent	13472-36-1
221667	Sodium tetraborate decahydrate, 99.5%, for analysis	1303-96-4
534441	TAPS, 99%	29915-38-6
245105	L-(+)-Tartaric acid, 99%	87-69-4
256725	Tricine, 99%	5704-04-01
407715	Tris(hydroxymethyl)aminomethane, TRIS, 99%	77-86-1
226162	Tris(hydroxymethyl)aminomethane, TRIS, 99.5%, extra pure	77-86-1
297158	Tris(hydroxymethyl)aminomethane hydrochloride, TRIS HCl, 99%	1185-53-1
108030	N-Tris(hydroxymethyl)methyl-4-aminobutanesulfonic acid, TABS, 97%	54960-65-5
199971	N-Tris(hydroxymethyl)methyl-2-aminoethanesulfonic acid, TES, 99%	7365-44-8
326984	N-Tris(hydroxymethyl)methyl-2-aminoethanesulfonic acid sodium salt hydrate , 99%	70331-82-7



# Chemical Synthesis of Carbohydrates

Carbohydrates are the most extensive and widely used organic compounds in nature. Owing to their structural complexity, it is almost impossible to obtain enough structurally defined carbohydrates from natural sources. Fortunately, there has been great effort invested in establishing chemical and enzymatic approaches for the synthesis of oligosaccharides which provide powerful access to obtaining glycans and glycolconjugates for biological investigations.

As a professional supplier, J&K provides one-stop service with more than 200 related products, including reagents for carbohydrate synthesis, glycosyl donors, activating agents and so on. J&K products are highly stereoselective and will meet all your requirements from research to large-scale manufacturing.

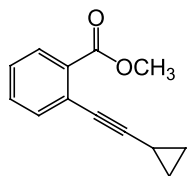


## References

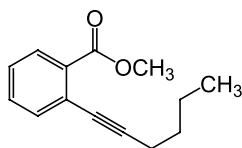
[1] Tetrahedron Lett. **2008**, 49, 3604-3608.

## ■ Novel Reagents for Glycosyl Donor Synthesis

1412764



1412684



Cat. No.	Description	CAS
1412764	Methyl 2-(cyclopropylethynyl)benzoate, 98%	1357469-11-4
1412684	Methyl 2-(hex-1-yn-1-yl)benzoate, 98%	462637-40-7

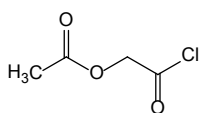
## ■ Activating Agents

Cat. No.	Description	CAS
502144	Bis(cyclopentadienyl)zirconium dichloride, 99%	1291-32-3
921076	Boron trifluoride diethyl etherate, 48%BF <sub>3</sub> , J&KSeal	109-63-7
102492	2-Chloro-1-methylpyridinium iodide, 97%	14338-32-0
208060	Copper(II) trifluoromethanesulfonate, 98%	34946-82-2
275643	N-Iodosuccinimide, 99%	516-12-1
221715	Methyl trifluoromethanesulfonate, 96%	333-27-7
174441	Silver trifluoromethanesulfonate, 98%	2923-28-6
242768	Trifluoromethanesulfonic acid, 99%	1493-13-6

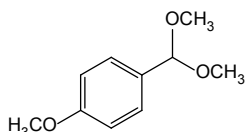
# Chemical Synthesis of Carbohydrates

## Other Reagents for Carbohydrates Synthesis

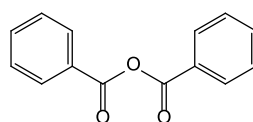
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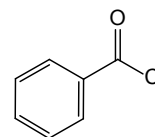
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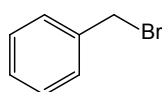
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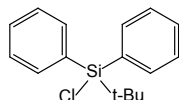
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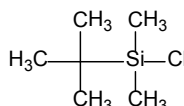
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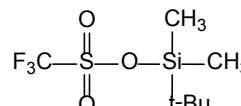
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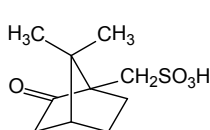
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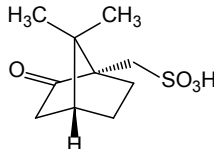
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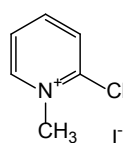
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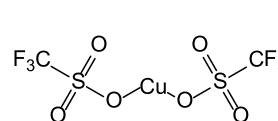
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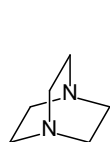
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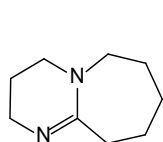
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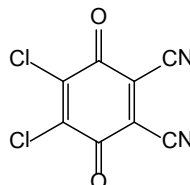
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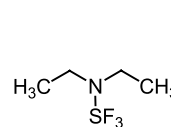
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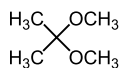
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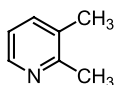
Cat. No.	Description	CAS
192001	Acetoxyacetyl chloride, 97%	13831-31-7
151258	p-Anisaldehyde dimethyl acetal, 98%	2186-92-7
308434	Benzoic anhydride, 98%	93-97-0
954055	Benzoyl chloride, 98%, ACS reagent	98-88-4
520318	Benzyl bromide, 97%	100-39-0
362315	tert-Butylchlorodiphenylsilane, 98%	58479-61-1
236144	tert-Butyldimethylchlorosilane, TBDMCl, TBDMSCl, 99%	18162-48-6
218454	tert-Butyldimethylsilyl trifluoromethanesulfonate, 98%	69739-34-0
502667	10-Camphorsulfonic acid, 98%	5872-08-2
485835	(+)-10-Camphorsulfonic acid, (+)-CSA, 99%	3144-16-9
102492	2-Chloro-1-methylpyridinium iodide, 97%	14338-32-0
208060	Copper(II) trifluoromethanesulfonate, 98%	34946-82-2
129882	1,4-Diazabicyclo[2.2.2]octane, TED, 97%	280-57-9
292269	1,8-Diazabicyclo[5.4.0]undec-7-ene, DBU, 98%	6674-22-2
480967	2,3-Dichloro-5,6-dicyano-1,4-benzoquinone, DDQ, 98%	84-58-2
168478	Diethylaminosulfur trifluoride, 95%	38078-09-0

# Chemical Synthesis of Carbohydrates

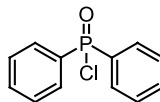
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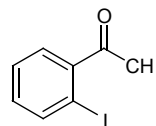
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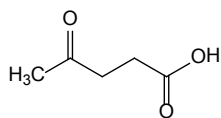
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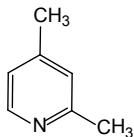
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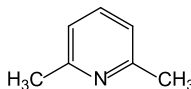
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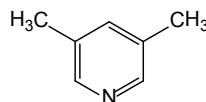
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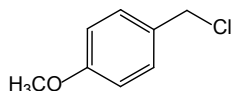
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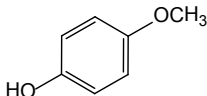
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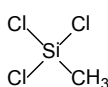
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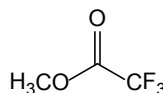
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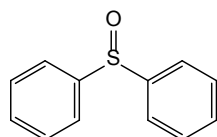
225993



421428



212672



Cat. No.	Description	CAS
101363	2,2-Dimethoxypropane, 98%	77-76-9
420738	2,3-Dimethylpyridine, 98%	583-61-9
325632	Diphenylphosphinic chloride, 98%	1499-21-4
348820	2'-Iodoacetophenone, 99%	2142-70-3
245974	Levulinic acid, 99%	123-76-2
605107	2,4-Lutidine, 98%	108-47-4
140198	2,6-Lutidine, 99%, redistillation	108-48-5
290364	3,5-Lutidine, 99%	591-22-0
400128	4-Methoxybenzyl chloride, 98%, stabilized with potassium carbonate	824-94-2
443109	4-Methoxyphenol, MEHQ, 99%	150-76-5
225993	Methyltrichlorosilane, LS 40, 98%	75-79-6
421428	Methyl trifluoroacetate, 99%	431-47-0
212672	Phenyl sulfoxide, 99%	945-51-7

# Chemical Synthesis of Nucleosides

Nucleoside synthesis is carried out by a stepwise addition of nucleotide monomers to form short oligonucleosides by means of phosphoramidite chemistry. The first monomer is attached to a solid support such as a glass bead at its 3'-O position, while its 5'-O position is protected with a DMT group. In the pharmaceutical industry, nucleoside drugs play an important role in the treatment of viral diseases. At present, the clinical application of antiviral drugs can be divided according to chemical structure into nucleosides, tricyclic amines, pyrophosphates, polypeptides, etc. Antiviral nucleosides are widely used as an important class of antiviral drugs and account for 60% of applications.

As a professional supplier, J&K provides

- Wide range of products: More than 300 products including nucleoside derivatives, coupling reagents, capping reagents and labeling reagents.
- Bulk available: All products will meet your requirements from research to large-scale manufacturing.

## ■ Capping solutions for Nucleotide Synthesis

Cat. No.	Description	CAS
944908	Pyridine, 99.5%, SuperDry, water≤30 ppm, J&KSeal	110-86-1
299669	Pyridine, 99.5%, SuperDry, with molecular sieves, J&KSeal	110-86-1
974643	Tetrahydrofuran, THF, 99.5%, SuperDry, with molecular sieves, stabilized with 250 ppm BHT, J&KSeal	109-99-9
315353	Tetrahydrofuran, THF, 99.9%, SuperDry, stabilized with 250 ppm BHT, J&KSeal	109-99-9
902032	Tetrahydrofuran, THF, 99.9%, SuperDry, stabilizer free, J&KSeal	109-99-9

## ■ Coupling Reagents for Nucleotide Synthesis

Cat. No.	Description	CAS
130035	4,5-Dicyanoimidazole, DCI, 99%	1122-28-7
275928	N,N'-Dicyclohexylcarbodiimide, 99%	538-75-0
225913	3-Nitro-1,2,4-triazole, 99%	24807-55-4
249948	1,2,4-Triazole, 99%	288-88-0
290099	2,4,6-Triisopropylbenzenesulfonyl chloride, 98%	6553-96-4
318458	2,4,6-Trimethylbenzenesulfonyl chloride, 99%	773-64-8

## ■ Deblocking solutions for Nucleotide Synthesis

Cat. No.	Description	CAS
991050	1,2-Dichloroethane, 99.5%, SuperDry, water≤30 ppm, J&KSeal	107-06-2
923794	1,2-Dichloroethane, 99.5%, SuperDry, with molecular sieves, water≤30 ppm, J&KSeal	107-06-2

## ■ Labeling Reagents for Nucleotide Synthesis

Cat. No.	Description	CAS
275136	Ferrocenecarboxylic acid, 98%	1271-42-7

## ■ Oxidizer Solutions for Nucleotide Synthesis

Cat. No.	Description	CAS
226100	Diethylamine, 99.5%	109-89-7
944908	Pyridine, 99.5%, SuperDry, water≤30 ppm, J&KSeal	110-86-1
299669	Pyridine, 99.5%, SuperDry, with molecular sieves, J&KSeal	110-86-1
943616	Tetrahydrofuran, THF, 99.5%, extra pure	109-99-9

# Chemical Synthesis of Nucleosides



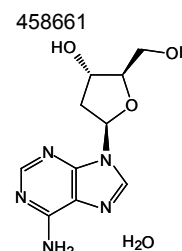
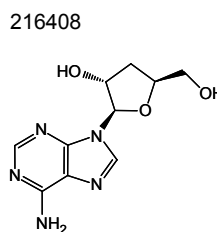
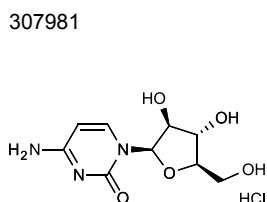
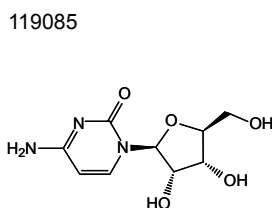
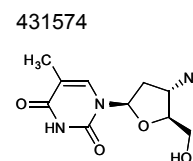
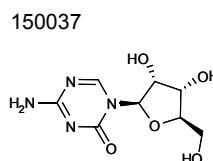
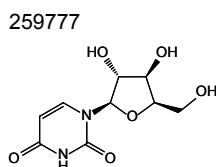
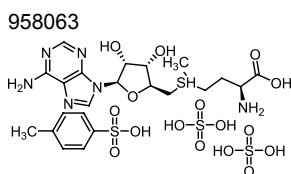
## ■ Phosphorylating Reagents for Nucleotide Synthesis

Cat. No.	Description	CAS
108244	2-Chloro-1,3,2-dioxaphospholane-2-oxide, 95%	6609-64-9
567155	Dibenzyl diisopropylphosphoramidite, 90%	108549-23-1
197054	Phenyl dichlorophosphate, 97%	770-12-7

## ■ Protecting Reagents for Nucleotide Synthesis

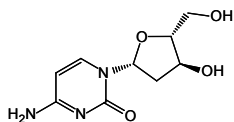
Cat. No.	Description	CAS
308434	Benzoic anhydride, 98%	93-97-0
954055	Benzoyl chloride, 98%, ACS reagent	98-88-4
447636	N,O-Bis(trimethylsilyl)acetamide, BSA, 95%	10416-59-8
208367	Bromidetriphenylmethane, 98%	596-43-0
362315	tert-Butylchlorodiphenylsilane, 98%	58479-61-1
236144	tert-Butyldimethylchlorosilane, TBDMCl, TBDMSCl, 99%	18162-48-6
458784	Chlorotrimethylsilane, TMCS, 99%, J&KSeal	75-77-4
409051	Di-tert-butylsilyl bis(trifluoromethanesulfonate), 97%	85272-31-7
216817	1,3-Dichloro-1,1,3,3-tetraisopropylidisiloxane, 97%	69304-37-6
284114	4,4'-Dimethoxytriphenylmethyl chloride, DMT-Cl, 98%	40615-36-9
191255	N,N-Dimethylformamide dimethyl acetal, DMF-DMA, 95%	4637-24-5
996309	Hexamethyldisilazane, HMDS, 99%, J&KSeal	999-97-3
580093	Isobutyryl chloride, 98%	79-30-1
228224	4-Methoxytrityl chloride, MMTrCl, 98%	14470-28-1
281400	2-Nitrobenzyl bromide, 98%	3958-60-9
290099	2,4,6-Triisopropylbenzenesulfonyl chloride, 98%	6553-96-4
264281	Trimethylsilyl trifluoromethanesulfonate, TMS triflate, 99%	27607-77-8

## ■ Nucleoside derivatives

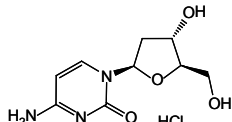


# Chemical Synthesis of Nucleosides

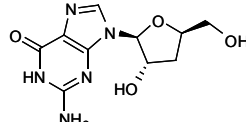
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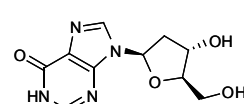
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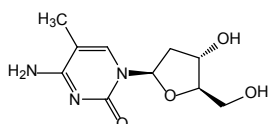
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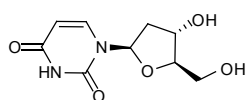
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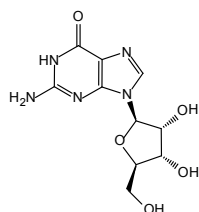
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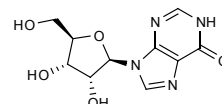
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979688

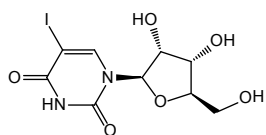


197918

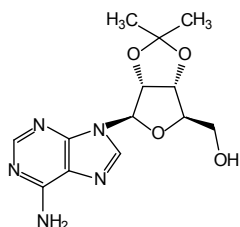


Cat. No.	Description	CAS
958063	S-Adenosyl-L-methionine, 98%	29908-03-0
259777	1-(β-D-Arabinofuranosyl)uracil, 98%	3083-77-0
150037	5-Azacytidine, 99%	320-67-2
431574	3'-Azido-3'-deoxythymidine, AZT, 98%	30516-87-1
119085	Cytidine, 99%	65-46-3
307981	Cytosine β-D-arabinofuranoside hydrochloride, 98%	69-74-9
216408	3'-Deoxyadenosine, 98%	73-03-0
458661	2'-Deoxyadenosine monohydrate, 98%	16373-93-6
206550	2'-Deoxycytidine, 98%	951-77-9
137640	2'-Deoxycytidine hydrochloride, 99%	3992-42-5
240184	2'-Deoxyguanosine, 98%	961-07-9
532038	2'-Deoxyinosine, 98%	890-38-0
142157	2'-Deoxy-5-methylcytidine, 98%	838-07-3
585489	2'-Deoxyuridine, 99%	951-78-0
979688	Guanosine, 98%	118-00-3
197918	Inosine, 99%	58-63-9

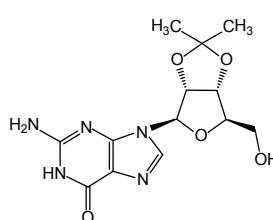
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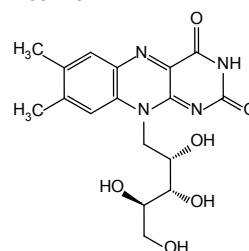
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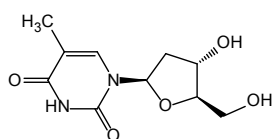
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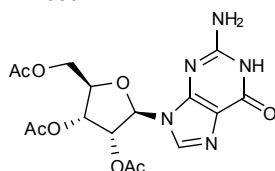
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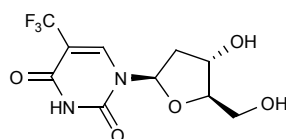
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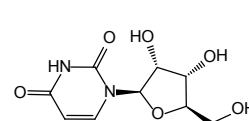
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552943



399796



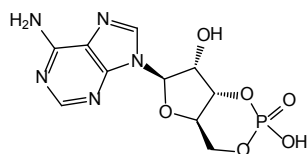
# Chemical Synthesis of Nucleosides



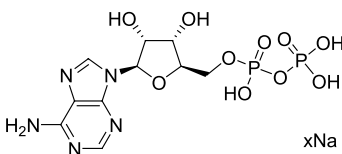
Cat. No.	Description	CAS
235157	5-Iodouridine, 99%	1024-99-3
108016	2',3'-O-Isopropylideneadenosine, 98%	362-75-4
479182	2',3'-O-Isopropylideneadenosine, 98%	362-76-5
469220	Riboflavin, 98%	83-88-5
144001	Thymidine, dT, 99%	50-89-5
442833	2',3',5'-Tri-O-acetylguanosine, 98%	6979-94-8
552943	Trifluorothymidine, 98%	70-00-8
399796	Uridine, 99%	58-96-8

## ■ Nucleotide and Derivatives

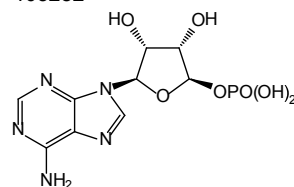
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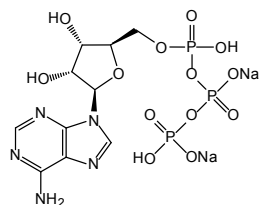
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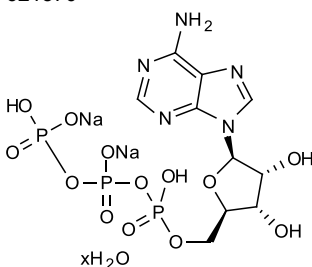
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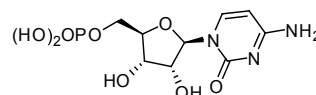
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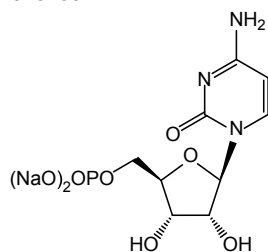
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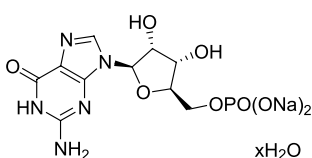
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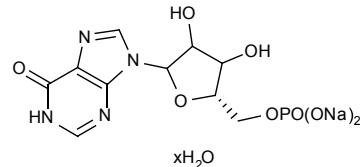
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235621



1084449

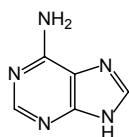


Cat. No.	Description	CAS
464651	Adenosine 3',5'-cyclophosphate, AMP, 99%	60-92-4
594034	Adenosine 5'-diphosphate sodium salt, 5'-ADP-Na, 98%	20398-34-9
103282	Adenosine 5'-monophosphate, 5'-AMP, 99%	61-19-8
438666	Adenosine 5'-triphosphate disodium salt, 5'-ATP-2Na, 98%	987-65-5
621370	Adenosine 5'-triphosphate disodium salt hydrate, 5'-ATP-2Na hydrate, 98%	34369-07-8
268019	Cytidine 5'-monophosphate, 98%	63-37-6
545255	Cytidine 5'-monophosphate disodium salt, 99%	6757-06-8
235621	Guanosine 5'-monophosphate disodium salt hydrate, 5'-GMP-2Na, 99%	5550-12-9
1084449	Inosine 5'-monophosphate disodium salt hydrate, IMP-2Na hydrate, 98%	352195-40-5

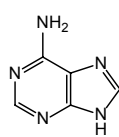
# Chemical Synthesis of Nucleosides

## ■ Purine Nucleobases

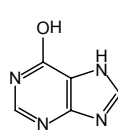
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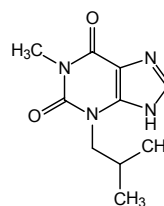
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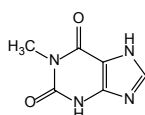
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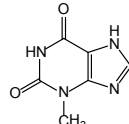
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122349



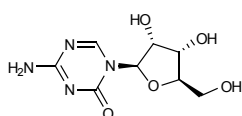
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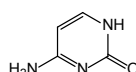
Cat. No.	Description	CAS
391047	Adenine, 99%	73-24-5
242090	Adenine, 99.5%	73-24-5
462785	Hypoxanthine, 98%	68-94-0
312460	3-Isobutyl-1-methylxanthine, IBMX, 99%	28822-58-4
122349	1-Methylxanthine, 98%	6136-37-4
423805	3-Methylxanthine, 98%	1076-22-8

## ■ Pyrimidine Nucleobases

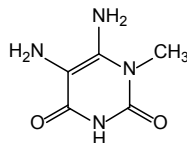
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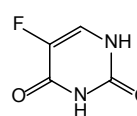
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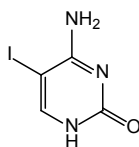
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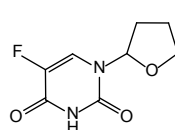
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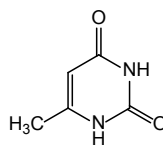
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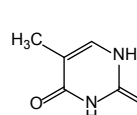
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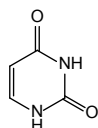
120611



207930



248225



Cat. No.	Description	CAS
150037	5-Azacytidine, 99%	320-67-2
457913	Cytosine, 99%	71-30-7
485631	5,6-Diamino-1-methyluracil, 97%	6972-82-3
180939	5-Fluorouracil, 99%	51-21-8

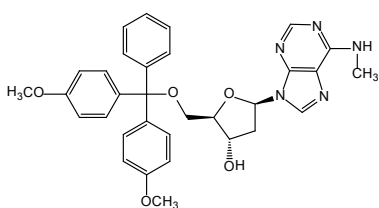


# Chemical Synthesis of Nucleosides

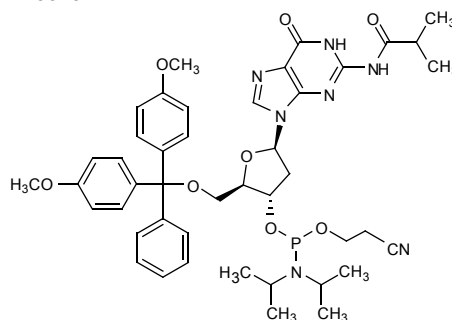
Cat. No.	Description	CAS
152584	5-Iodocytosine, 98%	1122-44-7
120611	6-Methyluracil, 98%	626-48-2
515848	1-(2-Tetrahydroformyl)-5-fluorouracil, 98%	17902-23-7
207930	Thymine, 99%	65-71-4
248225	Uracil, 98%	66-22-8

## ■ Phosphoramidites and Reagents for Oligonucleotide

151007



279075



Cat. No.	Description	CAS
151007	2'-Deoxy-5'-O-dimethoxytrityl-N <sup>6</sup> -methyladenosine, 98%	98056-69-0
279075	2'-Deoxy-5'-O-DMT-N <sup>2</sup> -isobutyrylguanosine 3'-CE phosphoramidite, 99%	93183-15-4

Detergents are surface acting cleansing agents effective in solubilizing hydrophobic molecules. They play an important role in many practical applications in the area of biochemistry. J&K offers a broad range of biological detergents to meet your research and manufacturing needs.

Cat. No.	Description	CAS
317330	Benzalkonium chloride, 50 wt.% solution in H <sub>2</sub> O	63449-41-2
928512	Benzalkonium chloride, 98%	63449-41-2
125437	Benzethonium chloride, 97%	121-54-0
280097	Benzyltrimethylhexadecylammonium chloride hydrate, 98%	122-18-9
986844	Benzyltrimethyltetradecylammonium chloride, 99%	139-08-2
450637	1-Butanesulfonic acid sodium salt, 99%, for ion-pair chromatography	2386-54-1
405757	Cetylpyridinium chloride monohydrate, 98%	6004-24-6
951898	Chenodeoxycholic acid, 98%	474-25-9
288975	3-[(3-Cholamidopropyl)dimethylammonio]-1-propane sulfonate, CHAPS, 98%	75621-03-3
977474	Cholic acid, 98%	81-25-4
907755	1-Decanesulfonic acid sodium salt, 98%	13419-61-9
551891	1-Decanesulfonic acid sodium salt, 99.5%, for ion-pair chromatography	13419-61-9
534966	Decyl β-D-maltopyranoside, 98%	82494-09-5
950079	Diethylene glycol, 99%	111-46-6
287969	Digitonin, 50%	11024-24-1
552436	Dimethyldioctadecylammonium bromide, 99%	3700-67-2
372179	N,N-Dimethyldodecylamine N-oxide, LDAO, DDAO, 30 wt.% solution in H <sub>2</sub> O, mixture	1643-20-5
619795	3-(N,N-Dimethylmyristylammonio)propanesulfonate, 98%	14933-09-6
555554	Dioctyl sulfosuccinate sodium salt, 94%	577-11-7
936782	1-Dodecanesulfonic acid sodium salt, 99%, for ion-pair chromatography	2386-53-0
936339	Dodecyl β-D-maltopyranoside, 98%	69227-93-6
284491	Dodecyltrimethylammonium bromide, DTAB, 99%	1119-94-4
211154	Dodecyltrimethylammonium chloride, IPC-DTMA-Cl, 98%	112-00-5
947659	N-Dodecyltrimethyl(3-sulfopropyl)ammonium hydroxide, 99%	14933-08-5
417919	Ethylhexadecyldimethylammonium bromide, 99%	124-03-8
509681	Girard's Reagent T, 98%	123-46-6
107563	Glycochenodeoxycholic acid, 97%	16564-43-5
389250	Glycodeoxycholic acid sodium salt, 97%	16409-34-0
243982	1-Heptanesulfonic acid sodium salt, 99.5%, for ion-pair chromatography	22767-50-6
998632	1-Heptanesulfonic acid sodium salt monohydrate, 99.5%, for ion-pair chromatography	207300-90-1
113112	1-Hexadecylpyridinium bromide, 98%	140-72-7
192496	Hexadecyltrimethylammonium bromide, CTABr, 99%	57-09-0
246043	Hexadecyltrimethylammonium chloride, CTAC, 99%	112-02-7
931254	1-Hexanesulfonic acid sodium salt, 99.5%, for ion-pair chromatography	2832-45-3
430819	1-Hexanesulfonic acid sodium salt monohydrate, 99.5%, for ion-pair chromatography	207300-91-2
379029	2-(Hexyloxy)ethanol, 98%	112-25-4
266729	Isopropyl β-D-thiogalactopyranoside, IPTG, 99%, for biochemistry	367-93-1
442981	N-Lauroylsarcosine, 90%	97-78-9
164930	Lithium dodecyl sulfate, 99%	2044-56-6
456815	1-Nonanesulfonic acid sodium salt, 98%, for ion-pair chromatography	35192-74-6

# Detergents



Cat. No.	Description	CAS
567607	Nonyl β-D-glucopyranoside, 98%	69984-73-2
931454	4-Nonylphenyl-polyethylene glycol, NP-40	9016-45-9
194500	1-Octanesulfonic acid sodium salt, NAS-FAL, 99.5%, for ion-pair chromatography	5324-84-5
965647	1-Octanesulfonic acid sodium salt monohydrate, 99.5%, for ion-pair chromatography	207596-29-0
273103	Octyl β-D-glucopyranoside, OGP, 98%	29836-26-8
302199	PEG-PPG-PEG, 98%, average M.W. 5,800	9003-11-6
918085	1-Pentanesulfonic acid sodium salt, 99.5%, for ion-pair chromatography	22767-49-3
913771	Poly(ethylene glycol), PEG, average M.W. 200	25322-68-3
954582	Poly(ethylene glycol), PEG, average M.W. 400	25322-68-3
977947	Poly(ethylene glycol), PEG, average M.W. 600	25322-68-3
989143	Poly(ethylene glycol), PEG, average M.W. 2,000	25322-68-3
158799	Poly(ethylene glycol), PEG, average M.W. 6,000	25322-68-3
214944	Polyethylene glycol dodecyl ether	9002-92-0
921549	Poly(ethylene glycol methyl ether), MPEG, average M.W. 750	9004-74-4
966210	Saponin, saponin content 60%, from Camellia sinensis(L.)O.Kuntze	8047-15-2
482689	Saponin, 98%, from Tribulus terrestris L.	8047-15-2
910764	Sodium caprylate, 98%	1984-06-1
619342	Sodium chenodeoxycholate, 98%	2646-38-0
403474	Sodium cholate, 98%	361-09-1
559522	Sodium deoxycholate, 98%	302-95-4
985868	Sodium dodecyl sulfate, SDS, 80%	151-21-3
105893	Sodium dodecyl sulfate, SDS, 99%, for biochemistry	151-21-3
163273	Sodium hyodeoxycholate, 96%	10421-49-5
209188	Sodium 1-pentanesulfonate monohydrate	207605-40-1
132129	Sorbitan monooleate	1338-43-8
937355	Sorbitan trioleate	26266-58-0
585476	Sucrose monocaprinate, 97%	31835-06-0
330776	Taurochenodeoxycholic acid sodium salt, 97%	6009-98-9
619128	Taurocholic acid sodium salt hydrate, 98%	345909-26-4
423806	Taurodeoxycholic acid sodium salt, 97%	1180-95-6
496672	Tauroursodeoxycholic acid, 98%	14605-22-2
438232	Tetrabutylammonium perchlorate, 98%	1923-70-2
174897	Tetraheptylammonium bromide, 99%	4368-51-8
341158	Tetrakis(decyl)ammonium bromide, 99%	14937-42-9
114834	Tetramethylammonium hydroxide pentahydrate, 98.5%	10424-65-4
928383	Triton X-114	9036-19-5
476208	Tyloxapol	25301-02-4
970735	Ursodeoxycholic acid, UDCS, 98%	128-13-2

# Enzyme Substrates and Inhibitors

Enzyme research is quite important in many areas of the life sciences. J&K is proud of its ability to provide novel, stable and high sensitivity Chromogenic Substrates, Colorimetric Substrates, Fluorescent Substrates, and Inhibitors. These substrates and inhibitors are widely used in enzyme assays, ELISA, blotting, imaging, immunohistochemical methods and many other applications. These applications include basic research, drug discovery, diagnostics, and food safety areas.

J&K Scientific will meet your requirements from research to large-scale manufacturing.

## ■ Chromogenic Substrates

Cat. No.	Description	CAS	For Enzyme
132283	Adenosine, 99%	58-61-7	Alkaline Phosphatase
100844	L-Alanine, 99%	56-41-7	Alanine Transaminase
113968	L-Aspartic acid, 98%	56-84-8	Transaminase
265978	5-Bromo-4-chloro-3-indolyl-N-acetyl-β-D-glucosaminide, 98%	4264-82-8	β-D-Acetylglucosaminidase
192653	5-Bromo-4-chloro-3-indolyl β-D-glucopyranoside, X-Glc, 98%	15548-60-4	β-Glucuronidase
280513	2-Chloro-4-nitrophenyl α-L-fucopyranoside, CNP-AFU, 98%	157843-41-9	L-Gucosidase
208394	1,3-Dibromopropane, 99%	109-64-8	Haloalkane Dehalogenases
213644	3-Dimethylaminobenzoic acid, 99%	99-64-9	Peroxidase
346190	N-[3-(2-Furyl)acryloyl]-L-phenylalanyl-glycyl-glycine, FAPGG, 98%	64967-39-1	Angiotensin converting enzyme (ACE)
968161	D-Glucose-6-phosphate disodium salt, 98%	3671-99-6	6-Phosphogluconic Dehydrogenase
178184	D-Glucose 6-phosphate sodium salt, G-6-P Na, 98%	54010-71-8	6-Phosphogluconic Dehydrogenase
387160	L-Glutathione, 99%, GSH, for analysis, reduced	70-18-8	Glutathione S-Transferase
257614	Glycylglycine, 99%	556-50-3	γ-Glutamyl Transferase
204762	3-Hydroxybutyric acid sodium salt, 99%	150-83-4	Lactate Dehydrogenase
581375	Inosine 5'-monophosphate disodium salt, 98%, 5'-IMP 2Na	4691-65-0	Inosine 5'-monophosphate Dehydrogenase
282985	α-Ketobutyric acid sodium salt, 98%	2013-26-5	Lactate Dehydrogenase Isoenzymes
158656	L-Lactic acid lithium salt, 99%	27848-80-2	Lactate Dehydrogenase
595956	L-Leucine-p-nitroanilide, 99%	4178-93-2	Leucine Aminopeptidase
549897	4-Nitrophenyl N-acetyl-β-D-glucosaminide, 98%	3459-18-5	N-Acetyl-Glucosaminidase
247160	4-Nitrophenyl β-D-galactopyranoside, 98%	3150-24-1	β-Galactosidase
270305	4-Nitrophenyl α-D-glucopyranoside, 98%	3767-28-0	α-Glucosidase
174539	4-Nitrophenyl β-D-glucopyranoside, 99%	2492-87-7	β-Glucosidase
295751	4-Nitrophenyl-β-D-glucuronide, 99%	10344-94-2	β-Glucuronidase
224753	L-Serine, 99%	56-45-1	Serine Hydroxymethyl Transferase
297561	Sodium pyruvate, 99%	113-24-6	Lactate Dehydrogenase

## ■ Chromogenic Substrates

Cat. No.	Description	CAS	For Enzyme
286089	Acetylthiocholine iodide, 98%	1866-15-5	Acetylcholinesterase
236213	5-Aminosalicylic acid, 5-ASA, 98.5%	89-57-6	Peroxidase
185223	2,2'-Azino-bis(3-ethylbenzothiazoline-6-sulfonic acid) diammonium salt, AzBTS-(NH <sub>4</sub> ) <sub>2</sub> , 98%	30931-67-0	Peroxidase
198468	S-Butyrylthiocholine iodide, 98%	1866-16-6	Cholinesterase
150020	5-Bromo-6-chloro-3-indolyl phosphate p-toluidine salt, 98%	6769-80-8	Alkaline Phosphatase
518723	5-Bromo-4-chloro-3-indolyl acetate	3252-36-6	Esterase

# Enzyme Substrates and Inhibitors



Cat. No.	Description	CAS	For Enzyme
446581	3,3'-Diaminobenzidine, DAB, 99%	91-95-2	Peroxidase
472252	o-Dianisidine, 98%	119-90-4	Alkaline Phosphatase
151804	Nitrotetrazolium blue chloride, 98%	298-83-9	Alkaline Phosphatase
254303	p-Nitrophenyl phosphate disodium salt hexahydrate, 98%	333338-18-4	Alkaline Phosphatase
446877	2-Nitrophenyl $\beta$ -D-galactopyranoside, ONPG, 98%	369-07-3	$\beta$ -Galactosidase
576646	o-Phenylenediamine, OPD, 99.5%	95-54-5	Peroxidase
270119	3,3',5,5'-Tetramethylbenzidine, TMB, 99%	54827-17-7	Peroxidase
292086	3,3',5,5'-Tetramethylbenzidine dihydrochloride, TMB 2HCl, 98%	64285-73-0	Peroxidase

## ■ Fluorescent Substrates

Cat. No.	Description	CAS	For Enzyme
431318	7-Amino-4-methylcoumarin, 97.5%	26093-31-2	Cystine aminopeptidase
433886	3-(4-Hydroxyphenyl)propionic acid, 99%	501-97-3	Peroxidase
239270	$\alpha$ -Ketoglutaric acid, 99%	328-50-7	Alkaline Phosphatase
159287	L-Leucine p-nitroanilide hydrochloride, 98%	16010-98-3	Leucine Aminopeptidase
337806	D-Luciferin, 99%	2591-17-5	Luciferase
433521	D-Luciferin potassium salt, 98%	115144-35-9	Luciferase
565360	4-Methylumbelliferyl phosphate, 99%	3368-04-5	Phosphatase
167936	Tyramine, 97%	51-67-2	Tyraminase
426683	Z-Gly-Pro-p-nitroanilide, 98%	65022-15-3	Prolyl Endopeptidase

## ■ Inhibitors

Cat. No.	Description	CAS
298087	Acarbose, 95%	56180-94-0
426391	Acenaphthenequinone, 95%	82-86-0
136759	4-Aminobenzamidine dihydrochloride, 98%	2498-50-2
554252	4-(2-Aminoethyl)benzenesulfonyl fluoride hydrochloride, AEBSF-HCl, 99%	30827-99-7
145815	6-Aminohexanoic acid, EACA, 99%	60-32-2
549339	3-Amino-1H-1,2,4-triazole, 95%	61-82-5
470737	Apigenin, 98%	520-36-5
257155	L-Arg(NO <sub>2</sub> )-Ome·HCl, L-NAME, 98%, a nonselective inhibitor of nitric oxide synthetases (NOS)	51298-62-5
150037	5-Azacytidine, 99%	320-67-2
431574	3'-Azido-3'-deoxythymidine, AZT, 98%	30516-87-1
312502	O-6-Benzylguanine, 98%	19916-73-5
329150	2-Bromo-4'-methoxyacetophenone, 98%	2632-13-5
232165	N-tert-Butyl- $\alpha$ -phenylnitron, PBN, 98%	3376-24-7
247526	Caffeic acid, 99%, predominantly trans	331-39-5
215847	(S)-(+)-Camptothecin, 98%	7689-03-4
196918	Capsaicin, 99%, from Capsicum annum L.	404-86-4
237181	Captopril, 98%, an angiotensin-converting enzyme (ACE) inhibitor	62571-86-2
211812	Chlorogenic acid, 98%, from Eucommia ulmoides Oliver	327-97-9

## Enzyme Substrates and Inhibitors

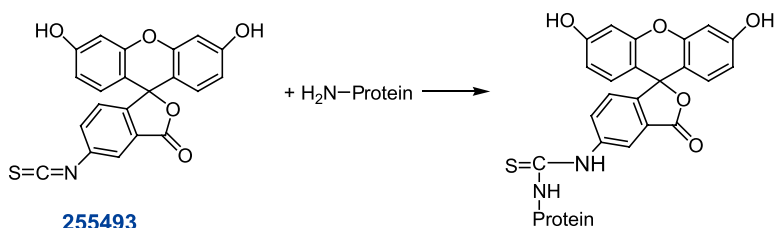
Cat. No.	Description	CAS
376184	Chrysin, 99%	480-40-0
479478	Colchicine, 97%	64-86-8
921105	Curcumin, 98%, a natural phenolic compound with impressive antioxidant properties	458-37-7
160696	Daidzein, 98%	486-66-8
164791	2,4-Diamino-6-hydroxypyrimidine, 98%	56-06-4
293556	D609 potassium salt, 98%	83373-60-8
245421	Emodin, 95%, from <i>Rheum palmatum</i> L.	518-82-1
291945	(-)-Epigallocatechin gallate, EGCG, 98%, from Green Tea	989-51-5
466446	N-Ethylmaleimide, 99%	128-53-0
916054	Flurbiprofen, 99%, a nonsteroidal anti-inflammatory agent (NSAIA)	5104-49-4
253493	Genistein, 99%	446-72-0
408218	Ibuprofen, 98%, an anti-inflammatory inhibitor targeting COX-1 and COX-2	15687-27-1
258643	Kaempferol, 98%, from <i>Sophora japonica</i> Linn.	520-18-3
900602	Lovastatin, 98%, an inhibitor of HMG-CoA reductase	75330-75-5
211835	Melatonin, 99%	73-31-4
107428	S-Methylisothiurea hemisulfate salt, SMT, 99%	867-44-7
151804	Nitrotetrazolium blue chloride, 98%	298-83-9
325022	Paclitaxel, 98%, a microtubule polymer stabilizer	33069-62-4
347052	1,10-Phenanthroline monohydrate, 99%	5144-89-8
593524	O-Phosphorylethanolamine, 95%	1071-23-4
153570	2-Propylpentanoic acid, 98%	99-66-1
259196	Resveratrol, 98%	501-36-0
479725	Sodium butyrate, 98%	156-54-7
288108	Spermine, 98%	71-44-3
604770	Staurosporine, 98%, from <i>Streptomyces</i> sp.	62996-74-1
178125	Sulfaphenazole, 99%	526-08-9
340523	Theophylline, 98%	58-55-9
562981	$\alpha$ -Toluenesulfonyl fluoride, 99%	329-98-6

# Fluorescent Reagents

Fluorescence techniques have been widely used in life science research, especially for analysis and detection of nucleic acids, proteins, peptides and other biomolecules.

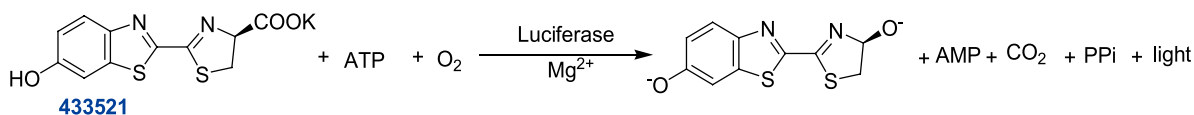
J&K provides novel and high quality fluorescent technology, including fluorescent enzyme substrates, fluorescent labeling reagents, fluorescent stains, fluorescent indicators and probes.

- For protein labeling to sequence of proteins and peptides



[1]

- For biophotonic imaging and high-throughput screening applications



[2]

## References

- [1] Mol. Pharmaceutics. **2012**, 9 (11), 3218–3227  
 [2] J. Phys. Chem. A, **2012**, 116 (28), 7452–7461

## Fluorescent Labeling Reagents

Cat. No.	Description	CAS
612818	N-(9-Acridinyl)maleimide, NAM, 98%	49759-20-8
338112	Actinomycin D, 98%	50-76-0
136759	4-Aminobenzamidine dihydrochloride, 98%	2498-50-2
299867	5-Aminofluorescein, 95%	3326-34-9
299866	5(6)-Aminofluorescein, 98%	27599-63-9
431318	7-Amino-4-methylcoumarin, 98%	26093-31-2
270732	2-Aminopyridine, 2-AP, 99%	504-29-0
102767	4-(Aminosulfonyl)-7-fluorobenzofurazane, ABD-F, 98%, derivatization grade	91366-65-3
330166	7-Amino-4-trifluoromethylcoumarin, 95%	53518-15-3
442848	8-Anilino-1-naphthalenesulfonic acid ammonium salt, 97%	28836-03-5
458606	Anthracene, 98.5%	120-12-7
246883	9-Anthraldehyde, 99%	642-31-9
129426	Auramine O, dye content 60%	2465-27-2
104224	1,2-Bis(2-aminophenoxy)ethane-N,N,N',N'-tetraacetic acid tetrasodium salt, 97%	126824-24-6
427297	Bis(2,4,6-trichlorophenyl)oxalate, TCPO, 98%	1165-91-9
992216	9-(Bromomethyl)acridine, 98%, derivatization grade	1556-34-9
418944	4-Bromomethyl-7-methoxycoumarin, 97%	35231-44-8
258764	5(6)-Carboxyfluorescein, 97%	72088-94-9
992375	6-Carboxyfluorescein, 98%	3301-79-9
142320	5(6)-Carboxyfluorescein diacetate N-succinimidyl ester, 90%	150347-59-4

## Fluorescent Reagents

Cat. No.	Description	CAS
562385	4-(N-Chloroformylmethyl-N-methylamino)-7-nitro-2,1,3-benzoxadiazole, NBD-COCl, 92%, derivatization grade	140164-85-8
434551	9-Chloromethylanthracene, 98%	24463-19-2
293655	Dansylamide, DNSA, 98%	1431-39-6
388477	4-(Dansylamino)phenyl isothiocyanate, DNSAPITC, 98%	102417-94-7
276443	Dansyl hydrazine, 98%	33008-06-9
504130	7,8-Dihydroxycoumarin, 98%, from Daphne koreana	486-35-1
341724	3,5-Diaminobenzoic acid, 98%	535-87-5
997629	1,8-Diaminonaphthalene, 90%	479-27-6
102273	2,3-Diaminonaphthalene, DAN, 97%	771-97-1
234356	1,8-Diazafluoren-9-one, 99%	54078-29-4
223219	2',7'-Dichlorofluorescein	76-54-0
404608	2',7'-Dichlorofluorescein 3',6'-diacetate, 96%	2044-85-1
564434	6,7-Dihydroxycoumarin, 98%	305-01-1
172953	(3,4-Dimethoxyphenyl)acetonitrile, 98%	93-17-4
393824	N,N'-Dimethyl-9,9'-bisacridinium nitrate, 95%	2315-97-1
571461	Eosin Y disodium salt, dye content 85%, indicator	17372-87-1
128686	9-Fluorenylmethyl carbazate, 98%, derivatization grade	35661-51-9
197308	9-Fluorenylmethyl chloroformate, 98%, Fmoc-Cl	28920-43-6
988398	Fluorescamine, 98%	38183-12-9
487758	Fluorescein, indicator	2321-07-5
487759	Fluorescein disodium salt	518-47-8
255493	Fluorescein isothiocyanate isomer I, FITC(isomer I), 95%	3326-32-7
196963	7-Fluorobenzofurazan-4-sulfonic acid ammonium salt, SBD-F, 99%, derivatization grade	84806-27-9
301307	4-Fluoro-7-nitrobenzofurazan, NBD-F, 98%	29270-56-2
463132	4-Fluoro-3-nitrobenzoic acid, 98%	453-71-4
205040	4-Hydrazino-7-nitro-benzofurazan hydrazine adduct, NBD-H, 98%, derivatization grade	131467-87-3
185846	4-Hydroxybenzhydrazide, 98%	5351-23-5
153384	7-Hydroxycoumarin, 98%	93-35-6
212017	7-Hydroxy-4-methylcoumarin-3-acetic acid, 98%	5852-10-8
266791	4-Hydroxyphenylacetic acid, 98%	156-38-7
200892	7-Hydroxy-4-(trifluoromethyl)coumarin, 98%	575-03-1
433521	D-Luciferin potassium salt, 98%	115144-35-9
519244	1-Methylpyrene, 97%	2381-21-7
337922	2,3-Naphthalenedicarboxaldehyde, 99%, derivatization grade	7149-49-7
985419	Nile Red, 97.5%	7385-67-3
323974	9,10-Phenanthrenequinone, 98%	84-11-7
279465	Phenanthridine, 98%	229-87-8
576646	o-Phenylenediamine, OPD, 99.5%	95-54-5



# Leiker—New Cross-linker

Chemical cross-linking of proteins coupled with mass spectrometry analysis (CXMS) has emerged as a powerful tool for the analysis of complex protein structures and protein-protein interactions. CXMS methods are less time-consuming and less demanding of sample purity than are traditional methods, this technology has thus been increasing in popularity. It does not typically work well, however, on complex samples that contain many different proteins, as it is difficult to separate the cross-linked peptides from the overwhelming amounts of non cross-linked peptides<sup>[1]</sup>.

J&K Scientific, as a professional supplier, is proud to offer a new cross-linker called Leiker that addresses this limitation. Leiker makes possible the efficient and effective CXMS of large protein complexes.

- Leiker enables effective enrichment of cross-linked peptides.

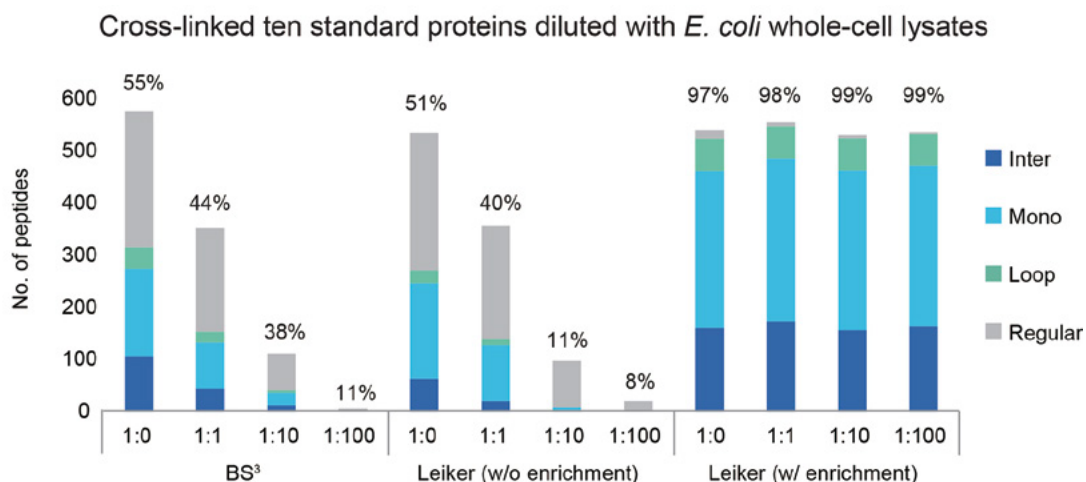


Figure 1. Leiker allowed near 100% enrichment of target peptides from a cross-linked ten-protein mixture diluted with increasing amounts of non-cross-linked *E. coli* lysates<sup>[1]</sup>.

- Crosslinking efficiency is higher than BS<sup>3</sup>.

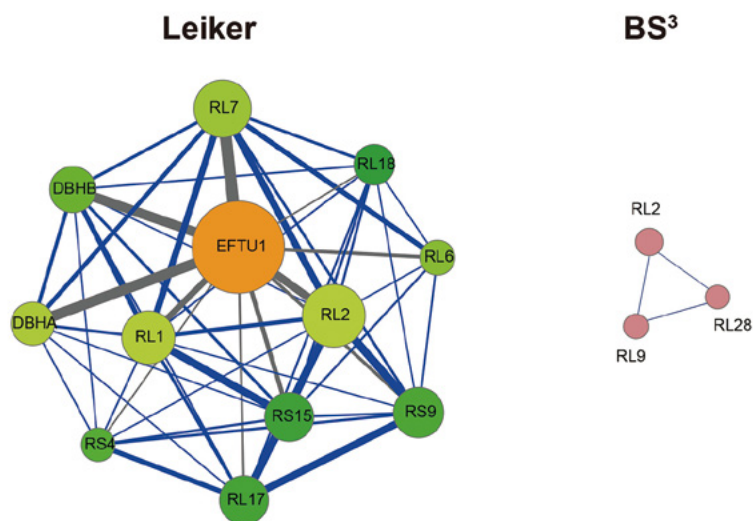


Figure 2. CXMS analyses of *E. coli* and *C. elegans* lysates. The best protein-protein interaction cluster extracted from the Leiker-identified or BS<sup>3</sup>-identified (Yang et al., 2012) inter-links from *E. coli* whole-cell lysates<sup>[1][2]</sup>.

## References

- Tan and Li, et al. *eLife* **2016**; 5:e12509
- Yang, et al. *Nature Methods* **2012**; 9:904–906

## ■ Leiker-based quantitative CXMS analysis

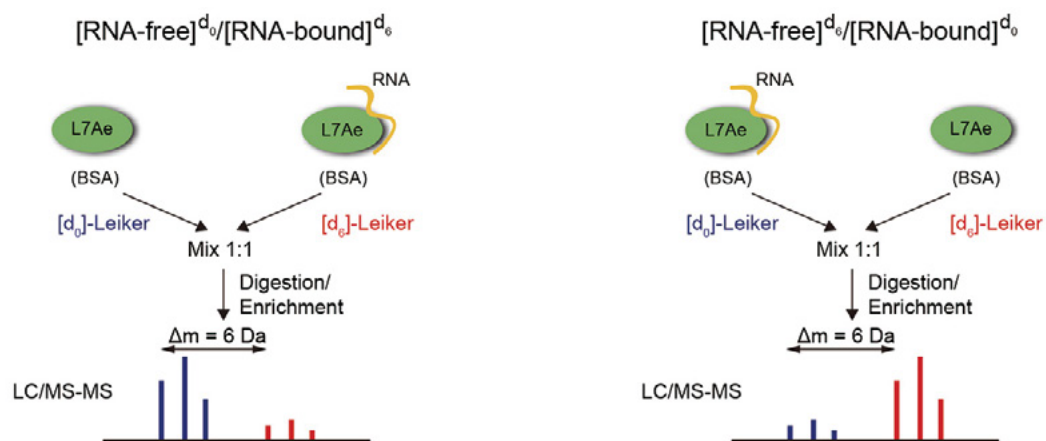


Figure 3. Quantitative CXMS analysis of the L7Ae-RNA complex. Reciprocal labeling of RNA-free (F) and RNA-bound (B) L7Ae with [d<sub>0</sub>]/[d<sub>6</sub>]-Leiker<sup>11</sup>.

## ■ Product List

Cat. No.	Description	Pack Size
2138035	Leiker, 95%	5 mg 10 mg
2322681	d6-Leiker, 95%	5 mg 10 mg

## ■ Other Cross-linkers

Cat. No.	Description	CAS
350636	4-Benzoylbenzoic acid N-succinimidyl ester, 97%	91990-88-4
146482	Bis(sulfosuccinimidyl) suberate sodium salt, BS <sup>3</sup> , 90%	82436-77-9
296329	Di(N-succinimidyl) 3,3'-dithiodipropionate, DTSP, 97%	57757-57-0
456454	Di(N-succinimidyl) glutarate, DSG, 97%	79642-50-5
253405	Di(N-succinimidyl) suberate, DSS, 98%	68528-80-3
1410146	Disuccinimidyl tartrate, DST, 95%	77658-91-4
792543	3,3'-Dithiobispropionic acid bis-sulfosuccinimidyl ester, DTSSP, 90%	81069-02-5
444282	N-Succinimidyl iodoacetate, 95%	39028-27-8
551313	N-Succinimidyl 3-(2-pyridyldithio)propionate, SPDP, 96%	68181-17-9

# Nano-microspheres



Nano-microspheres are particles that range in size from 5 nm to 1000  $\mu\text{m}$ . They are widely used as drug carriers, enzyme carriers, conductive balls or magnetic beads in biological pharmaceuticals, food safety testing and medical diagnostics. Their characteristics include:

- Easy surface modification
- Large specific surface area
- Excellent biocompatibility
- Good stability in physiological medium

Cat. No.	Description	CAS
1924547	Amino $\text{Fe}_3\text{O}_4$ magnetic beads, 0.1 - 0.2 $\mu\text{m}$ , 0.5% (w/v) , suspended in PBS buffer solution	1317-61-9
914411	Amino $\text{Fe}_3\text{O}_4$ magnetic beads, 0.2 - 0.3 $\mu\text{m}$ , 0.5% (w/v) , suspended in PBS buffer solution	1317-61-9
1924551	Amino polystyrene magnetic beads, 1 - 2 $\mu\text{m}$ , 0.5% (w/v) , suspended in PBS buffer solution	N/A
1927286	Amino polystyrene microspheres, 0.2 $\mu\text{m}$ , 2.5% (w/v) suspended in deionized water	9003-53-6
921972	Amino polystyrene microspheres, 2 $\mu\text{m}$ , 2.5% (w/v) suspended in deionized water	9003-53-6
913531	Amino polystyrene microspheres, 4 $\mu\text{m}$ , 2.5% (w/v) suspended in deionized water	9003-53-6
987272	Amino polystyrene microspheres, 7 $\mu\text{m}$ , 2.5% (w/v) suspended in deionized water	9003-53-6
952697	Amino silica magnetic beads, SLC, 1 - 2 $\mu\text{m}$ , 1% (w/v), suspended in PBS buffer solution	14808-60-7
1924554	Amino silica magnetic beads, SLE, 1 - 2 $\mu\text{m}$ , 1% (w/v), suspended in PBS buffer solution	14808-60-7
945606	Amino urea formaldehyde resin magnetic beads, 1 - 2 $\mu\text{m}$ , 1% (w/v), suspended in PBS buffer solution	N/A
1927287	Carboxyl polystyrene microspheres, 2 $\mu\text{m}$ , 2.5% (w/v) suspended in deionized water	9003-53-6
996252	Carboxyl polystyrene microspheres, 3 $\mu\text{m}$ , 2.5% (w/v) suspended in deionized water	9003-53-6
963023	Carboxyl polystyrene microspheres, 9 $\mu\text{m}$ , 2.5% (w/v) suspended in deionized water	9003-53-6
982842	Carboxylated silica magnetic beads, SLC, 1 - 2 $\mu\text{m}$ , 1% (w/v), suspended in PBS buffer solution	14808-60-7
1924555	Carboxylated silica magnetic beads, SLE, 1 - 2 $\mu\text{m}$ , 1% (w/v), suspended in PBS buffer solution	14808-60-7
1924549	Carboxylated $\text{Fe}_3\text{O}_4$ magnetic beads, 0.1 - 0.2 $\mu\text{m}$ , 0.5% (w/v), suspended in PBS buffer solution	1317-61-9
943117	Carboxylated $\text{Fe}_3\text{O}_4$ magnetic beads, 0.2 - 0.3 $\mu\text{m}$ , 0.5% (w/v), suspended in PBS buffer solution	1317-61-9
1924558	Carboxylated urea formaldehyde resin magnetic beads, 1% (w/v), 1 - 2 $\mu\text{m}$ , suspended in PBS buffer solution	N/A
1927297	Green fluorescent microspheres, 2 $\mu\text{m}$ , 1% (w/v) suspended in deionized water	N/A
958512	Green fluorescent microspheres, 3 $\mu\text{m}$ , 1% (w/v) suspended in deionized water	N/A
976411	Green fluorescent microspheres, 4 $\mu\text{m}$ , 1% (w/v) suspended in deionized water	N/A
992917	Green fluorescent microspheres, 5 $\mu\text{m}$ , 1% (w/v) suspended in deionized water	N/A
943871	Hydroxy $\text{Fe}_3\text{O}_4$ magnetic beads, 0.2 - 0.3 $\mu\text{m}$ , 0.5% (w/v), suspended in PBS buffer solution	1317-61-9
1924550	Hydroxy $\text{Fe}_3\text{O}_4$ magnetic beads, 0.1 - 0.2 $\mu\text{m}$ , 0.5% (w/v), suspended in PBS buffer solution	1317-61-9
975134	Hydroxyl silica magnetic beads, SLC, 1 - 2 $\mu\text{m}$ , 1% (w/v), suspended in PBS buffer solution	14808-60-7
1924556	Hydroxyl silica magnetic beads, SLE, 1 - 2 $\mu\text{m}$ , 1% (w/v), suspended in PBS buffer solution	14808-60-7
1924559	Hydroxyl urea formaldehyde resin magnetic beads, 1 - 2 $\mu\text{m}$ , 1% (w/v), suspended in PBS buffer solution	N/A
1927296	Orange fluorescent microspheres, 4 $\mu\text{m}$ , 1% (w/v) suspended in deionized water	N/A
952804	Orange fluorescent microspheres, 5 $\mu\text{m}$ , 1% (w/v) suspended in deionized water	N/A
930141	Polystyrene microspheres, 0.1 $\mu\text{m}$ , 2.5% (w/v) suspended in deionized water	9003-53-6
917425	Polystyrene microspheres, 0.3 $\mu\text{m}$ , 2.5% (w/v) suspended in deionized water	9003-53-6
934330	Polystyrene microspheres, 0.7 $\mu\text{m}$ , 2.5% (w/v) suspended in deionized water	9003-53-6
909275	Polystyrene microspheres, 1 $\mu\text{m}$ , 2.5% (w/v) suspended in deionized water	9003-53-6
1927285	Polystyrene microspheres, 5 $\mu\text{m}$ , 2.5% (w/v) suspended in deionized water	9003-53-6

## Nano-microspheres

Cat. No.	Description	CAS
1927295	Red fluorescent microspheres, 1 $\mu\text{m}$ , 1% (w/v) suspended in deionized water	N/A
977842	Red fluorescent microspheres, 2 $\mu\text{m}$ , 1% (w/v) suspended in deionized water	N/A
926355	Red fluorescent microspheres, 3 $\mu\text{m}$ , 1% (w/v) suspended in deionized water	N/A
927850	Red fluorescent microspheres, 4 $\mu\text{m}$ , 1% (w/v) suspended in deionized water	N/A
976478	Red fluorescent microspheres, 5 $\mu\text{m}$ , 1% (w/v) suspended in deionized water	N/A
775567	Silica microspheres, 1 $\mu\text{m}$ , 2.5% (w/v) suspended in 50% ethanol solution	60676-86-0
931663	Silica microspheres, 5 $\mu\text{m}$ , 2.5% (w/v) suspended in 50% ethanol solution	60676-86-0

# PEGylation Reagents



Poly(ethylene glycol) (PEG) is a highly investigated polymer for the covalent modification of biological macromolecules such as peptides, antibodies, enzymes and surfaces for many pharmaceutical and biotechnical applications. PEGylation, is now regarded as an extremely useful procedure to overcome certain problems faced in the development and use of protein drugs, e.g. Adagen®, Neulasta® and Somavert®, and a dozen other PEG-proteins are in advanced clinical trials.

Reasons for PEGylation of peptides and proteins are numerous and include shielding of antigenic and immunogenic epitopes, shielding receptor-mediated uptake by the reticuloendothelial system (RES), and preventing recognition and degradation by proteolytic enzymes. PEG conjugation also increases the apparent size of the polypeptide, thus reducing the renal filtration and altering biodistribution.

J&K offers monofunctional, homobifunctional, heterobifunctional, 4-arm or 8-arm PEG derivatives, with molecular weights from 1,000 up to 30,000, to suit all the needs of incorporation of various PEG functional groups.

## ■ Monofunctional

Cat. No.	Description
977087	mPEG-AA, average M.W. 2,000
959951	mPEG-AC, 95%, average M.W. 2,000
998159	mPEG-Alkyne, 95%, average M.W. 2,000
949518	mPEG-Alkyne, 95%, average M.W. 5,000
964988	mPEG-Amine, 95%, average M.W. 1,000
950276	mPEG-Amine, 95%, average M.W. 2,000
910322	mPEG-Amine, 95%, average M.W. 5,000
907608	mPEG-Azide, 95%, average M.W. 1,000
933260	mPEG-EPO, 95%, average M.W. 1,000
915146	mPEG-Mal, 95%, average M.W. 5,000
914527	mPEG-N <sub>3</sub> , 95%, average M.W. 5,000
963581	mPEG-NH <sub>2</sub> , 95%, average M.W. 10,000
439903	mPEG-NH <sub>2</sub> , 95%, average M.W. 30,000
917926	mPEG-OMs, 95%, average M.W. 2,000
924222	mPEG-SH, average M.W. 1,000
997187	mPEG-Silane, 95%, average M.W. 1,000
961680	mPEG-Thiol, 95%, average M.W. 2,000

## ■ Homobifunctional

Cat. No.	Description
925138	Acrylate-PEG-Acrylate, 95%, average M.W. 2,000
138485	Amine-PEG-Amine, average M.W. 1,000
932987	Amine-PEG-Amine, 95%, average M.W. 2,000
928726	Amine-PEG-Amine, 95%, average M.W. 4,000
1685130	Azide-PEG-Azide, 95%, average M.W. 1,000
999966	N <sub>3</sub> -PEG-N <sub>3</sub> , 95%, average M.W. 2,000
302199	PEG-PPG-PEG, 98%, average M.W. 5,800
1685145	SH-PEG-SH, 95%, average M.W. 1,000
988394	SH-PEG-SH, 95%, average M.W. 10,000

## ■ Heterobifunctional

Cat. No.	Description
1685183	4-Arm PEG-Alkyne, 95%, average M.W. 2,000
1685181	4-Arm PEG-Azide, 95%, average M.W. 2,000
906857	4-Arm PEG-N <sub>3</sub> , average M.W. 10,000
938562	4-Arm PEG-NH <sub>2</sub> , 95%, average M.W. 10,000
936590	4-Arm PEG-OTs, average M.W. 10,000
948586	4-Arm PEG-SH, average M.W. 10,000

## ■ 4-Arm PEG Derivatives

Cat. No.	Description
1685183	4-Arm PEG-Alkyne, 95%, average M.W. 2,000
1685181	4-Arm PEG-Azide, 95%, average M.W. 2,000
906857	4-Arm PEG-N <sub>3</sub> , average M.W. 10,000
938562	4-Arm PEG-NH <sub>2</sub> , 95%, average M.W. 10,000
936590	4-Arm PEG-OTs, average M.W. 10,000
948586	4-Arm PEG-SH, average M.W. 10,000

## ■ 8-Arm PEG Derivatives

Cat. No.	Description
1685176	8-Arm PEG-NH <sub>2</sub> , 95%, average M.W. 10,000

## ■ Additional Info

Abbreviation	Full Name
AA	Acetic acid
AC	Acrylate
EPO	Epoxide
HO	Hydroxy
Mal	Maleimide
OMs	Mesylate
SCM	Hydroxysuccinimide ester
SH	Thiol

# Protective Agents for Freeze-Drying



Freeze-drying is a basic and effective technique to maintain the bioactivity of microbes, animal tissue, cells and proteins. In order to maximize the survival rate and bioactivity of freeze-dried products, protective agents such as carbohydrates, polyhydric alcohols, polymers, or anhydrous solvents need to be added. As a professional supplier, J&K can provide novel and high quality protective agents for freeze-drying such as trehalose, dextran,  $\alpha$ -cyclodextrin,  $\beta$ -cyclodextrin and glycerol.

J&K offers protective agents for freeze-drying :

- High purity levels
- No antigenicity and non-toxic
- High disintegration temperature
- Rehydrate well

Cat. No.	Description	CAS
900523	Albumin, BSA, 98%, from bovine serum	9048-46-8
118040	L-Arginine, 99%	74-79-3
181931	$\alpha$ -Cyclodextrin, 98%	10016-20-3
972167	$\beta$ -Cyclodextrin, 98%	7585-39-9
132840	Dextran, average M.W. 500,000	9004-54-0
925578	Dimethyl sulfoxide, DMSO, 99.8%, for biochemistry, J&KSeal	67-68-5
985371	D-(+)-Glucose, ACS reagent	50-99-7
262536	Glycerol, 99%	56-81-5
149332	Glycine, 98%	56-40-6
307213	D-Lactose, 98%	63-42-3
611898	L-Lysine, 98%	56-87-1
351126	D-Mannitol, 98%	69-65-8
938956	Polyvinylpyrrolidone, average M.W. 8,000, K15 - 19	9003-39-8
968832	Polyvinylpyrrolidone, average M.W. 58,000, K29 - 32	9003-39-8
902615	Polyvinylpyrrolidone, average M.W. 1,300,000, K85 - 95	9003-39-8
132204	L-Proline, 99%	147-85-3
971624	D-(+)-Sucrose, 99.9%, for biochemistry	57-50-1
242508	D-(+)-Trehalose, 99%, anhydrous	99-20-7
563051	D-(+)-Trehalose dihydrate, 99%	6138-23-4

# Reagents for Peptide Synthesis

A peptide is a chain composed of various amino acid units connected via amide bonds. To date, two popular synthetic approaches, Fmoc and Boc methods, have been developed for peptide synthesis. With the rapid development of peptide synthesis methods as well as purification and analysis methods for peptide products, they can be used broadly as reagents in biochemical studies.

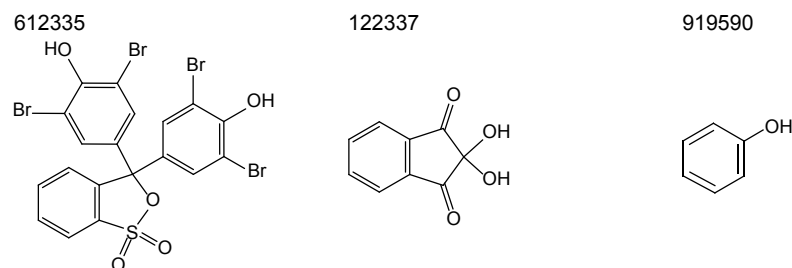
Based upon their inherent biocompatibility, biodegradability and recognition ability to specific proteins, peptides have been extensively applied in drug development. More importantly, during the last decade, researchers have demonstrated that some peptides can self-assemble into various well-ordered nanostructures which are valuable for many applications.

J&K is a professional supplier that provides condensation reagents, activating agents, deprotecting agents, solvents, coupling reagents, resins and other related products in flyer named amino acids and derivatives for your important applications.

J&K offers:

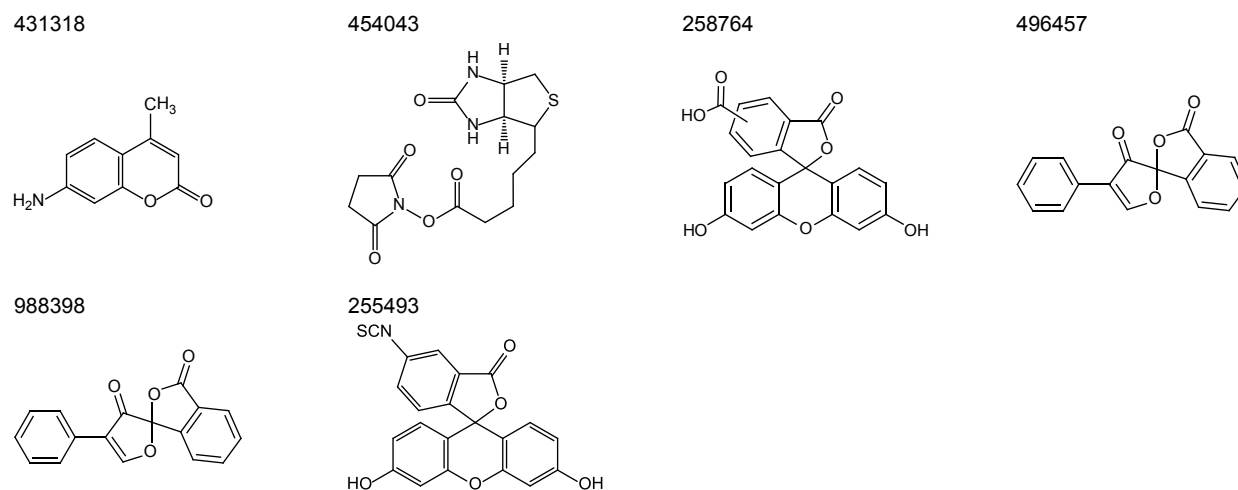
- One-stop service to meet your peptide synthesis requirements.
- Steady consistent supply with competitive prices.
- High quality reliable products for enhancing your research and manufacturing efficiency.

## ■ Analysis Reagents for Peptide Synthesis



Cat. No.	Description	CAS
612335	Bromophenol Blue, BPB, indicator	115-39-9
122337	Ninhydrin, ACS reagent	485-47-2
919590	Phenol, 99%	108-95-2

## ■ Labeling Reagents for Peptide Synthesis



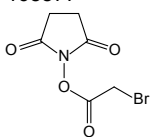


# Reagents for Peptide Synthesis

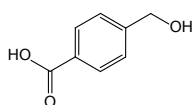
Cat. No.	Description	CAS
431318	7-Amino-4-methylcoumarin, 97.5%	26093-31-2
454043	(+)-Biotin N-hydroxysuccinimide ester, BNHS, 99%	35013-72-0
258764	5(6)-Carboxyfluorescein, 97%	72088-94-9
496457	Fluorescamine	38183-12-9
988398	Fluorescamine, 98%	38183-12-9
255493	Fluorescein isothiocyanate isomer I, FITC(isomer I), 95%	3326-32-7

## ■ Linkers for Peptide Synthesis

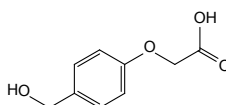
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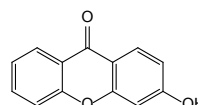
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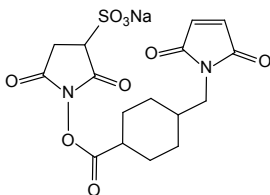
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136129



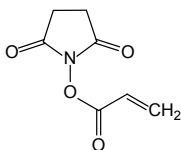
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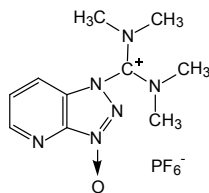
Cat. No.	Description	CAS
168877	Bromoacetic acid N-hydroxysuccinimide ester, 95%	42014-51-7
221506	4-Hydroxymethylbenzoic acid, 98%	3006-96-0
122810	4-(Hydroxymethyl)phenoxyacetic acid, 98%	68858-21-9
136129	3-Hydroxy-9H-xanthen-9-one, 97%	3722-51-8
253343	Sulfo-SMCC sodium, 95%	92921-24-9

## ■ Peptide Coupling Reagents

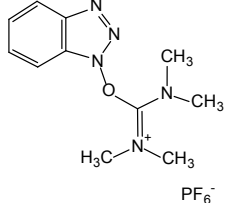
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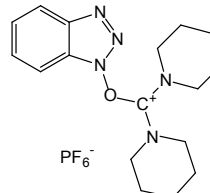
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163735

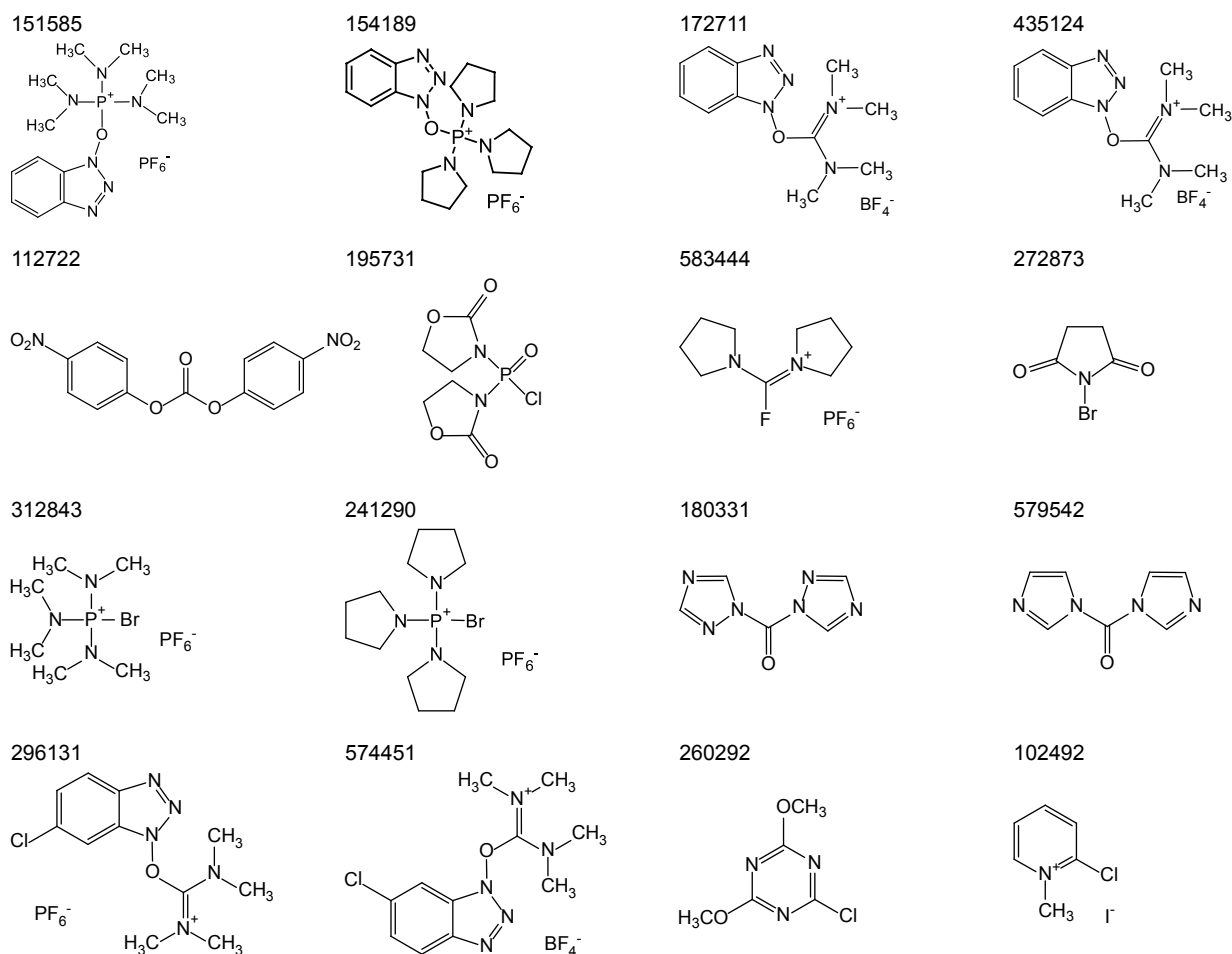


335839



Cat. No.	Description	CAS
287411	N-Acryloxysuccinimide, 99%	38862-24-7
249763	O-(7-Azabenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium hexafluorophosphate, HATU, 99%	148893-10-1
163735	O-Benzotriazole-N,N,N',N'-tetramethyluronium hexafluorophosphate, HBTU, 99%	94790-37-1
335839	O-(Benzotriazol-1-yl)-N,N,N',N'-bis(pentamethylene)uronium hexafluorophosphate, HBPIU, 98%	190849-64-0

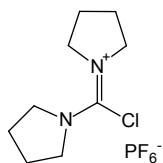
# Reagents for Peptide Synthesis



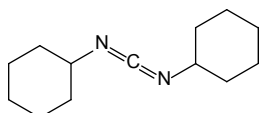
Cat. No.	Description	CAS
151585	Benzotriazol-1-yloxytris(dimethylamino)-phosphonium hexafluorophosphate, BOP, 98%	56602-33-6
154189	Benzotriazol-1-yloxytrispyrrolidinophosphonium hexafluorophosphate, PYBOP, 99%	128625-52-5
435124	O-(Benzotriazol-1-yl)-N,N,N',N'-tetramethyl-uronium tetrafluoroborate, TBTU, 99%	125700-67-6
112722	Bis(4-nitrophenyl) carbonate, 97%	5070-13-3
195731	Bis(2-oxo-3-oxazolidinyl)phosphinic chloride, BOP-Cl, 97%	68641-49-6
583444	Bis(tetramethylene)fluoroformamidinium hexafluorophosphate, BTFFH, 98%	164298-25-3
272873	N-Bromosuccinimide, NBS, 99%	128-08-5
312843	Bromotris(dimethylamino)phosphonium hexafluorophosphate, BroP, 98%	5029637-2
241290	Bromo-tris-pyrrolidino-phosphonium hexafluorophosphate, PyBrOP, 97%	13270551-2
180331	N,N'-Carbonyldiimidazole, CDI, 98%	53062-1
579542	1,1'-Carbonyl-di-(1,2,4-triazole), CDT, 97%	41864-22-6
296131	O-(1H-6-Chlorobenzotriazol-1-yl)-1,1,3,3-tetramethyluronium hexafluorophosphate, HCTU, 98%	330645-87-9
574451	O-(6-Chlorobenzotriazol-1-yl)-N,N,N',N'-tetramethyluronium tetrafluoroborate, TCTU, 98%	330641-16-2
260292	2-Chloro-4,6-dimethoxy-1,3,5-triazine, 97%	3140-73-6
102492	2-Chloro-1-methylpyridinium iodide, 97%	14338-32-0

# Reagents for Peptide Synthesis

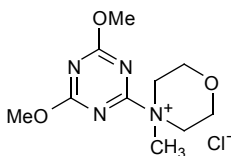
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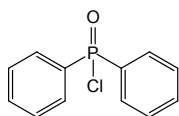
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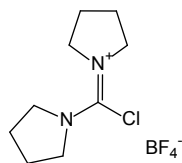
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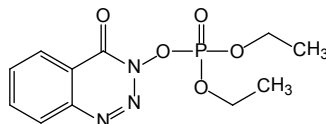
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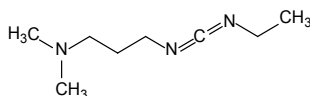
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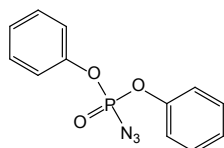
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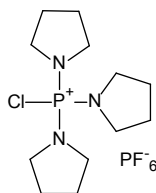
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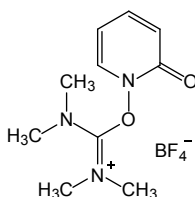
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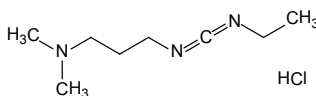
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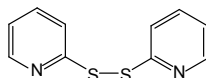
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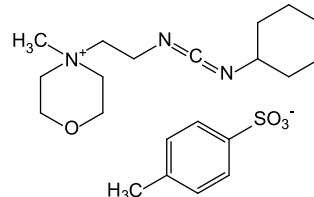
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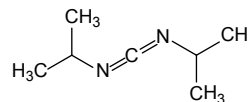
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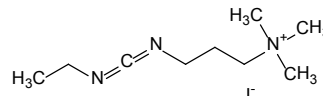
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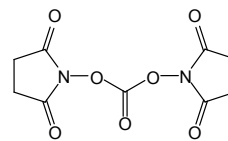
134385



284163

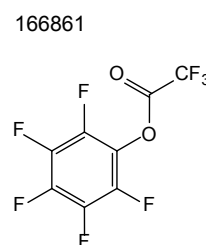
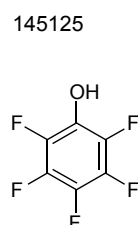
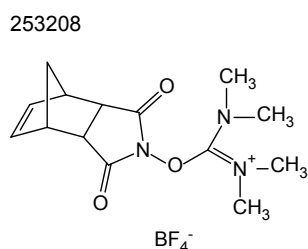
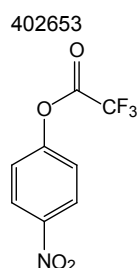
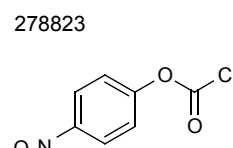
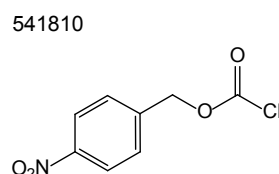
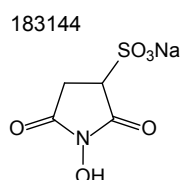
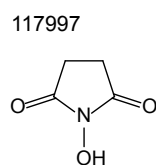
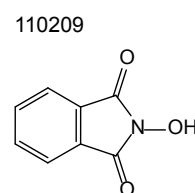
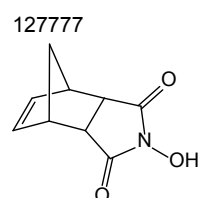
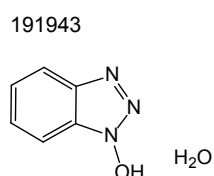
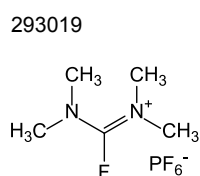
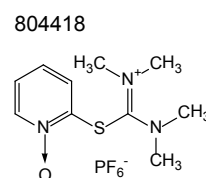
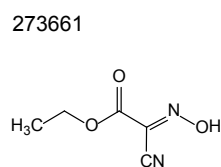
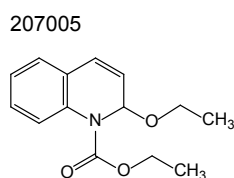
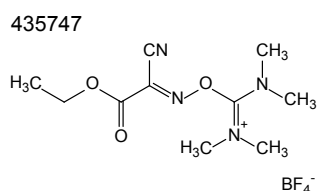


191243



Cat. No.	Description	CAS
459914	1-(Chloro-1-pyrrolidinylmethylene)pyrrolidinium hexafluorophosphate, PYCLU, 98%	135540-11-3
488086	1-(Chloro-1-pyrrolidinylmethylene)pyrrolidinium tetrafluoroborate, 99%	115007-14-2
501952	Chlorotripyrrolidinophosphonium hexafluorophosphate, PYCLOP, 98%	133894-48-1
227227	1-Cyclohexyl-3-(2-morpholinoethyl)carbodiimide metho-p-toluenesulfonate, CMC, 95%	2491-17-0
275928	N,N'-Dicyclohexylcarbodiimide, DCC, 99%	538-75-0
294598	3-(Diethoxyphosphoryloxy)-1,2,3-benzotriazin-4(3H)-one, DEPBT, 98%	165534-43-0
405354	O-(1,2-Dihydro-2-oxo-pyridyl)-1,1,3,3-tetramethyluronium tetrafluoroborate, TPTU, 99%	125700-71-2
134385	N,N'-Diisopropylcarbodiimide, DIC, 99%	693-13-0
276846	4-(4,6-Dimethoxy-1,3,5-triazin-2-yl)-4-methylmorpholinium chloride, DMTMM, 97.5%	3945-69-5
495017	1-(3-Dimethylaminopropyl)-3-ethylcarbodiimide, EDC, WSC, 97%	1892-57-5
211112	N-(3-Dimethylaminopropyl)-N'-ethylcarbodiimide hydrochloride, EDC HCl, 99%	25952-53-8
284163	N-(3-Dimethylaminopropyl)-N'-ethylcarbodiimide methiodide, 98%	22572-40-3
325632	Diphenylphosphinic chloride, 98%	1499-21-4
130992	Diphenylphosphoryl azide, DPPA, 98%	26386-88-9
228648	2,2'-Dipyridyl disulfide, 98%	2127-03-9
191243	N,N'-Disuccinimidyl carbonate, DSC, 99%	74124-79-1

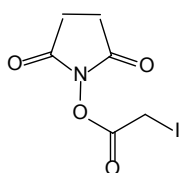
# Reagents for Peptide Synthesis



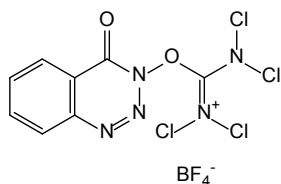
Cat. No.	Description	CAS
435747	O-[(Ethoxycarbonyl)cyanomethylenamino]-N,N,N',N'-tetramethyluronium tetrafluoroborate, TOTU, 98%	136849-72-4
207005	N-Ethoxycarbonyl-2-ethoxy-1,2-dihydroquinoline, EEDQ, 99%	16357-59-8
273661	Ethyl cyanoglyoxalate-2-oxime, 97%	3849-21-6
804418	S-(1-Oxido-2-pyridyl)-N,N,N',N'-tetramethylthiuronium hexafluorophosphate, 99%	212333-72-7
293019	N,N,N',N'-Tetramethylfluoroformamidinium hexafluorophosphate, TFFH, 97%	164298-23-1
191943	1-Hydroxybenzotriazole hydrate, HOBT hydrate, 99%	123333-53-9
127777	N-Hydroxy-5-norbornene-2,3-dicarboximide, HONB, 98%	21715-90-2
110209	N-Hydroxyphthalimide, 98%	524-38-9
117997	N-Hydroxysuccinimide, 98%	6066-82-6
183144	N-Hydroxysulfosuccinimide sodium salt, Sulfo-NHS, 98%	106627-54-7
541810	4-Nitrobenzyl chloroformate, 97%	4457-32-3
278823	4-Nitrophenyl chloroformate, 98%	7693-46-1
402653	4-Nitrophenyl trifluoroacetate, 98%	658-78-6
253208	O-(5-Norbornene-2,3-dicarboximido)-N,N,N',N'-tetramethyluronium tetrafluoroborate, TNTU, 98%	125700-73-4
145125	Pentafluorophenol, 99%	771-61-9
166861	Pentafluorophenyl trifluoroacetate, 98%	14533-84-7

# Reagents for Peptide Synthesis

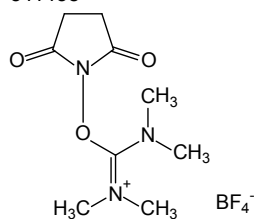
444282



342318



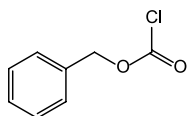
511438



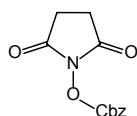
Cat. No.	Description	CAS
444282	N-Succinimidyl iodoacetate, 95%	39028-27-8
342318	N,N,N',N'-Tetramethyl-O-(3,4-dihydro-4-oxo-1,2,3-benzotriazin-3-yl)uronium tetrafluoroborate, TDBTU, 98%	125700-69-8
511438	N,N,N',N'-Tetramethyl-O-(N-succinimidyl)uronium tetrafluoroborate, TSTU, 97%	105832-38-0

## ■ Protection Reagents for Peptide Synthesis

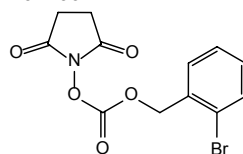
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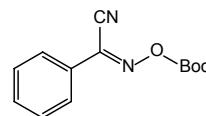
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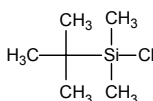
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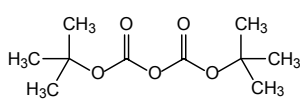
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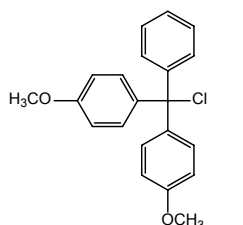
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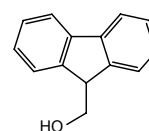
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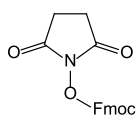
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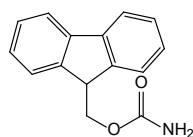
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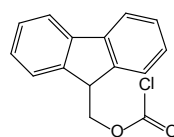
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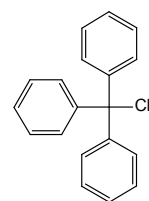
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197308



171149



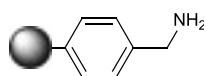
Cat. No.	Description	CAS
283749	Benzyl chloroformate, 97%, J&KSeal	501-53-1
227784	N-(Benzyloxycarbonyloxy)succinimide, Z-Osu, 99%	13139-17-8
104706	2-Bromobenzyl succinimidyl carbonate, Z(2-Br)-Osu, 99%	128611-93-8
436875	2-tert-Butoxycarbonyloxymino-2-phenylacetone nitrile, 99%	58632-95-4
236144	tert-Butyldimethylchlorosilane, TBDMCl, TBDMSCI, 99%	18162-48-6
252225	Di-tert-butyl dicarbonate, DIBOC, 99%	24424-99-5
284114	4,4'-Dimethoxytriphenylmethyl chloride, DMT-Cl, 98%	40615-36-9
291007	9-Fluorenmethanol, 99%	24324-17-2

# Reagents for Peptide Synthesis

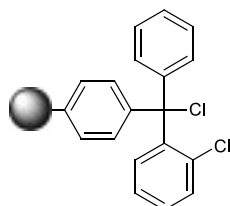
Cat. No.	Description	CAS
243179	N-(9-Fluorenylmethoxycarbonyloxy)succinimide, Fmoc-Osu, 98%	82911-69-1
277506	9-Fluorenylmethyl carbamate, 98%	84418-43-9
197308	9-Fluorenylmethyl chloroformate, Fmoc-Cl, 98%	28920-43-6
171149	Trityl chloride, 99%	76-83-5

## ■ Resins for Peptide Synthesis

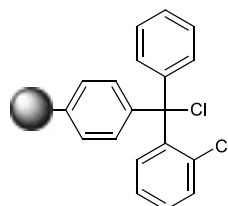
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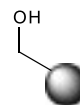
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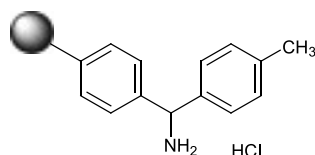
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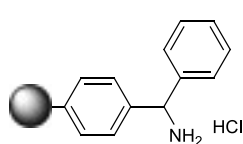
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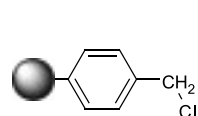
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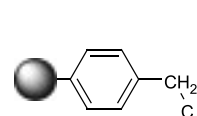
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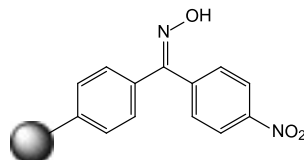
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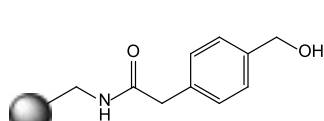
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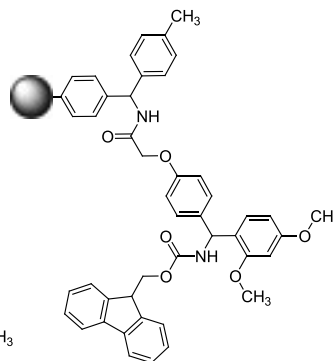
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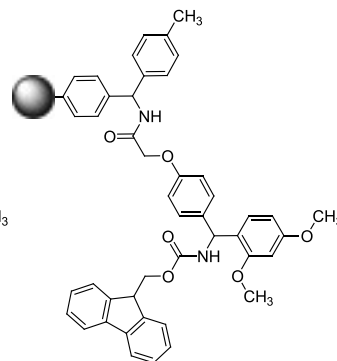
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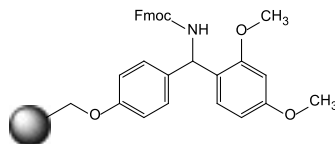
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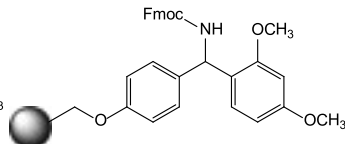
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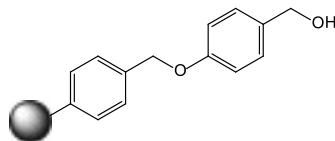
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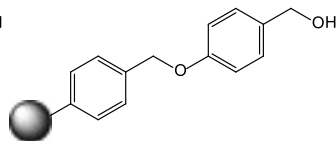
915914



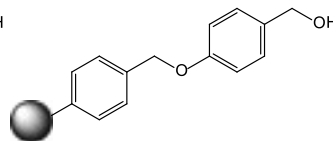
278838



946450



973518



Cat. No.	Description
500317	Aminomethyl resin, 70 - 90 mesh, 1.0 - 2.0 mmol/g loading
658802	2-Chlorotrityl chloride resin, 100 - 200 mesh, 1% DVB, 1.2 - 1.4 mmol/g
658801	2-Chlorotrityl chloride resin, 200 - 400 mesh, 1.0 - 1.5 mmol/g, 1% cross-linked
642531	Hydroxymethyl resin, 1% DVB cross-linked, 100 - 200 mesh, 0.5 - 1.5 mmol/g
946723	MBHA resin, 100 - 200 mesh, 0.5 - 1.0 mmol/g, 1% cross-linked
394488	MBHA resin, 200 - 400 mesh, 0.6 - 0.8 mmol/g, 1% cross-linked

# Reagents for Peptide Synthesis



Cat. No.	Description
134196	Merrifield resin, 100 - 200 mesh, 2.0 - 4.0 mmol/g, 1% cross-linked
912642	Merrifield resin, 200 - 400 mesh, 2.0 - 4.0 mmol/g, cross-linked with 1% DVB
447792	Oxime resin, 100 - 200 mesh, 1.0 - 1.5 mmol/g, 1% cross-linked
741641	PAM resin, 100 - 200 mesh, 0.7 - 1.3mmol/g, 1% cross-linked
910548	Rink Amide MBHA resin, 100 - 200 mesh, 0.3 - 1.0 mmol/g, 1% cross-linked
204223	Rink Amide MBHA resin, 200 - 400 mesh, 0.6 - 0.8 mmol/g, 1% cross-linked
1442050	Rink Amide resin, 100 - 200 mesh, 0.6 - 1.0 mmol/g, 1% cross-linked
915914	Rink Amide resin, 200 - 400 mesh, 0.6 - 1.0 mmol/g, 1% cross-linked
278838	Wang resin, 100 - 200 mesh, 1.0 - 2.0 mmol/g loading, cross-linked with 1% DVB
946450	Wang resin, 200 - 400 mesh, 0.8 - 1.0 mmol/g loading, cross-linked with 1% DVB
973518	Wang resin, 200 - 400 mesh, 1.6 - 2.0 mmol/g loading, cross-linked with 1% DVB

## ■ Solvents for Peptide Synthesis

Cat. No.	Description	CAS
531036	Acetic acid, 99.8%	64-19-7
909376	Acetonitrile, CAN, 99.9%, SuperDry, water≤30 ppm, J&KSeal	75-05-8
939631	Acetonitrile, CAN, 99.9%, SuperDry, with molecular sieves, J&KSeal	75-05-8
910906	Butyl acetate, 99%, SuperDry, J&KSeal	123-86-4
578165	Butyl ether, DNBE, 99%, SuperDry, J&KSeal	142-96-1
924745	Cyclopentane, 98%, SuperDry, J&KSeal	287-92-3
957164	1,2-Dichlorobenzene, 99%, SuperDry, J&KSeal	95-50-1
991050	1,2-Dichloroethane, 99.5%, SuperDry, water≤30 ppm, J&KSeal	107-06-2
362591	Diethylene glycol dimethyl ether, 99.5%, SuperDry, J&KSeal	111-96-6
902730	N,N-Dimethylacetamide, DMA, 99%	127-19-5
951007	N,N-Dimethylacetamide, DMA, 99.8%, SuperDry, J&KSeal	127-19-5
966438	N,N-Dimethylformamide, DMF, 99.8%, SuperDry, J&KSeal	68-12-2
983353	N,N-Dimethylformamide, DMF, 99.8%, SuperDry, with molecular sieves, J&KSeal	68-12-2
287533	N,N-Dimethylformamide, DMF, 99.9%	68-12-2
952941	N,N-Dimethylformamide, DMF, 99.9%, for biochemistry, J&KSeal	68-12-2
984549	Dimethyl sulfoxide, DMSO, 99%	67-68-5
935690	Dimethyl sulfoxide, DMSO, 99.7%, SuperDry, J&KSeal	67-68-5
292271	Dimethyl sulfoxide, DMSO, 99.7%, SuperDry, with molecular sieves, J&KSeal	67-68-5
925578	Dimethyl sulfoxide, DMSO, 99.8%, for biochemistry, J&KSeal	67-68-5
956927	Ethanol, 99.5%, for synthesis	64-17-5
954068	Ethanol, 99.5%, SuperDry, J&KSeal	64-17-5
922424	Ethanol, 99.5%, SuperDry, with molecular sieves, J&KSeal	64-17-5
954403	Ethyl acetate, EtOAc, 99.5%, SuperDry, J&KSeal	141-78-6
925296	Ethyl acetate, EtOAc, 99.8%, for biochemistry, J&KSeal	141-78-6
920352	Ethyl acetate, EtOAc, 99.9%, SuperDry, with molecular sieves, J&KSeal	141-78-6
947770	n-Hexane, 97.5%, SuperDry, J&KSeal	110-54-3
994903	n-Hexane, 97.5%, SuperDry, with molecular sieves, J&KSeal	110-54-3
971509	Isopropanol, IPA, 99.5%, SuperDry, J&KSeal	67-63-0

## Reagents for Peptide Synthesis

Cat. No.	Description	CAS
919270	Isopropanol, IPA, 99.5%, SuperDry, with molecular sieves, J&KSeal	67-63-0
930390	Methanol, 99.8%, for synthesis	67-56-1
980290	Methanol, 99.9%, SuperDry, water≤30 ppm, J&KSeal	67-56-1
957329	Methanol, 99.9%, SuperDry, with molecular sieves, water≤30 ppm, J&KSeal	67-56-1
325261	Methylcyclohexane, 99%, SuperDry, water≤20 ppm, J&KSeal	108-87-2
944736	Methylcyclohexane, 99%, SuperDry, with molecular sieves, J&KSeal	108-87-2
987699	Methyl formate, 99%, SuperDry, J&KSeal	107-31-3
917493	1-Methyl-2-pyrrolidinone, NMP, 99.5%, SuperDry, J&KSeal	872-50-4
299669	Pyridine, 99.5%, SuperDry, with molecular sieves, J&KSeal	110-86-1
943616	Tetrahydrofuran, THF, 99.5%, extra pure	109-99-9
974643	Tetrahydrofuran, THF, 99.5%, SuperDry, with molecular sieves, stabilized with 250 ppm BHT, J&KSeal	109-99-9



# Reagents for Proteomics Research



Proteomics is a methodology for protein analysis that has seen recent advances based on high-throughput screening technologies. Proteomics research not only provides a material understanding of the rules that define biological systems, but also provides a theoretical basis for identifying solutions for many kinds of disease. It is perhaps the most important modern tool for us to explore the mysteries of life.

J&K provides more than 100 products that can be used as proteomics research reagents, including protein electrophoresis reagents, protein crosslinking reagents and protein purification reagents. All J&K products are sure to meet your requirements from basic research to large-scale manufacturing.

## ■ Protein Electrophoresis Reagents

Cat. No.	Description	CAS
649778	Acrylamide/Bis-acrylamide Solution, 19:1, 40% solution, BioReagent, for electrophoresis	N/A
649777	Acrylamide/Bis-acrylamide Solution, 29:1, 40% solution, BioReagent, for electrophoresis	N/A
978186	Acrylamide/Bis-acrylamide, 19:1, BioReagent, for molecular biology	N/A
990387	Acrylamide/Bis-acrylamide, 29:1, BioReagent, for molecular biology	N/A
1351718	Acrylamide/N,N'-Methylenebisacrylamide, 37.5:1, BioReagent, for molecular biology	N/A
1351721	Acrylamide/N,N'-Methylenebisacrylamide Solution, 24:1, 30% solution, BioReagent	N/A
935853	Acrylamide/N,N'-Methylenebisacrylamide Solution, 37.5:1, 40% solution, BioReagent	N/A
287411	N-Acryloxysuccinimide, 99%	38862-24-7
202233	Adipic acid dihydrazide, 98%	1071-93-8
259379	2-Aminoethanethiol, 97%	60-23-1
977625	Ammonium persulfate, 98%	7727-54-0
350636	4-Benzoylbenzoic acid N-succinimidyl ester, 97%	91990-88-4
345271	Brilliant Blue R, dye content 70%	6104-59-2
168877	Bromoacetic acid N-hydroxysuccinimide ester, 95%	42014-51-7
140105	1,4-Butanediol diglycidyl ether, 95%	2425-79-8
1914018	CAPS Buffer, for Western Blot	N/A
327499	Coomassie Brilliant Blue G, for electrophoresis	6104-58-1
227227	1-Cyclohexyl-3-(2-morpholinoethyl)carbodiimide metho-p-toluenesulfonate, 95%	2491-17-0
607568	1,5-Difluoro-2,4-dinitrobenzene, 97%	327-92-4
495017	1-(3-Dimethylaminopropyl)-3-ethylcarbodiimide, 97%	1892-57-5
191243	N,N'-Disuccinimidyl carbonate, DSC, 99%	74124-79-1
253405	Di(N-succinimidyl) suberate, DSS, 98%	68528-80-3
540981	(R)-(+)-1,2-Dithiolane-3-pentanoic acid, 98%	1200-22-2
327498	Fast Green FCF, 90%	2353-45-9
190014	[2-[2-(Fmoc-amino)ethoxy]ethoxy]acetic acid, 98.5%	166108-71-0
902042	Glutaraldehyde, 50 wt.% solution in H <sub>2</sub> O	111-30-8
262536	Glycerol, 99%	56-81-5
149332	Glycine, 98%	56-40-6
433430	5-Hexynoic acid, 97%	53293-00-8
183144	N-Hydroxysulfosuccinimide sodium salt, Sulfo-NHS, 98%	106627-54-7
203615	Thioctic acid, 98%	1077-28-7
229882	Maleimidoacetic acid N-hydroxysuccinimide ester, 98%	55750-61-3
415447	3-Maleimidobenzoic acid N-hydroxysuccinimide ester, 98%	58626-38-3
316626	4-Maleimidobutyric acid N-hydroxysuccinimide ester, GMBS, 98%	80307-12-6
360723	6-Maleimidohexanoic acid, MCA, 98%	55750-53-3
245256	6-Maleimidohexanoic acid N-hydroxysuccinimide ester, EMCS, 98%	55750-63-5

# Reagents for Proteomics Research

Cat. No.	Description	CAS
389641	4-(4-Maleimidophenyl)butyric acid N-hydroxysuccinimide ester, SMPB, 98%	79886-55-8
453319	3-Maleimidopropionic acid, 98%	7423-55-4
141636	3-(Maleimido)propionic acid N-hydroxysuccinimide ester, 99%	55750-62-4
249096	2-Mercaptoethanol, BME, 99%, for electrophoresis and molecular biology	60-24-2
167248	6-Mercapto-1-hexanol, 6-MCH, 97%	1633-78-9
1913961	MES/SDS Running Buffer, pH 7.3, 20×, for electrophoresis	N/A
402847	N,N'-Methylenebisacrylamide, 98%, for electrophoresis	110-26-9
123536	Naphthol Blue Black, technical grade	1064-48-8
1914020	Phosphate buffered saline, 10×, BioUltra, pH 7.2 - 7.4	N/A
208322	Ponceau S, dye content 70%	6226-79-5
265747	Propargylamine, 98%	2450-71-7
551313	3-(2-Pyridyldithio)propionic acid N-hydroxysuccinimide ester, SPDP, 96%	68181-17-9
494597	Sebacic acid bis(N-succinimidyl) ester, DSSeb, 97%	23024-29-5
314162	Sodium cyanoborohydride, 95%	25895-60-7
559522	Sodium deoxycholate, 98%	302-95-4
160975	Sodium dodecyl sulfate, SDS, 99%, for electrophoresis	151-21-3
296329	Di(N-succinimidyl) 3,3'-dithiodipropionate, DTSP, 97%	57757-57-0
440927	N-Succinimidyl 4-formylbenzoate P-formylbenzoic acid n-hydroxysuccinimide ester, 98%	60444-78-2
444282	N-Succinimidyl iodoacetate, 95%	39028-27-8
467057	N-Succinimidyl 4-(maleimidomethyl)cyclohexane-1-carboxylate, SMCC, 99%	64987-85-5
253343	Sulfo-SMCC sodium, 95%	92921-24-9
953858	3',3'',5',5''-Tetrabromophenosulfonephthalein sodium salt, 0.1 wt.% solution in H <sub>2</sub> O	34725-61-6
913080	N,N,N',N'-Tetramethylethylenediamine, TEMED, 99%, extra pure	110-18-9
134574	Thiourea, 99%	62-56-6
1913951	Tris-Glycine native sample loading buffer, 2×	N/A
1913954	Tris-Glycine SDS sample buffer, 2×, for protein electrophoresis	N/A
226162	Tris(hydroxymethyl)aminomethane, TRIS, 99.5%, extra pure	77-86-1

## ■ Protein Crosslinking Reagents

Cat. No.	Description	CAS
350636	4-Benzoylbenzoic acid N-succinimidyl ester, 97%	91990-88-4
168877	Bromoacetic acid N-hydroxysuccinimide ester, 95%	42014-51-7
140105	1,4-Butanediol diglycidyl ether, 95%	2425-79-8
227227	1-Cyclohexyl-3-(2-morpholinoethyl)carbodiimide metho-p-toluenesulfonate, CMC, 95%	2491-17-0
607568	1,5-Difluoro-2,4-dinitrobenzene, 97%	327-92-4
495017	1-(3-Dimethylaminopropyl)-3-ethylcarbodiimide, EDC, 97%	1892-57-5
191243	N,N'-Disuccinimidyl carbonate, DSC, 99%	74124-79-1
253405	Di(N-succinimidyl) suberate, DSS, 98%	68528-80-3
540981	(R)-(+)-1,2-Dithiolane-3-pentanoic acid, 98%	1200-22-2
190014	[2-[2-(Fmoc-amino)ethoxy]ethoxy]acetic acid, 98.5%	166108-71-0
902042	Glutaraldehyde, 50 wt.% solution in H <sub>2</sub> O	111-30-8
433430	5-Hexynoic acid, 97%	53293-00-8

# Reagents for Proteomics Research



Cat. No.	Description	CAS
183144	N-Hydroxysulfosuccinimide sodium salt, Sulfo-NHS, 98%	106627-54-7
203615	Thioctic acid, 98%	1077-28-7
229882	Maleimidoacetic acid N-hydroxysuccinimide ester, 98%	55750-61-3
415447	3-Maleimidobenzoic acid N-hydroxysuccinimide ester, 98%	58626-38-3
316626	4-Maleimidobutyric acid N-hydroxysuccinimide ester, GMBS, 98%	80307-12-6
360723	6-Maleimidohexanoic acid, MCA, 98%	55750-53-3
245256	6-Maleimidohexanoic acid N-hydroxysuccinimide ester, EMCS, 98%, 98%	55750-63-5
389641	4-(4-Maleimidophenyl)butyric acid N-hydroxysuccinimide ester, SMPB, 98%, 98%	79886-55-8
453319	3-Maleimidopropionic acid, 98%	7423-55-4
141636	3-(Maleimido)propionic acid N-hydroxysuccinimide ester, 99%	55750-62-4
167248	6-Mercapto-1-hexanol, 6-MCH, 97%	1633-78-9
265747	Propargylamine, 98%	2450-71-7
551313	3-(2-Pyridyldithio)propionic acid N-hydroxysuccinimide ester, SPDP, 96%	68181-17-9
494597	Sebacic acid bis(N-succinimidyl) ester, DSSeb, 97%	23024-29-5
314162	Sodium cyanoborohydride, 95%	25895-60-7
296329	Di(N-succinimidyl) 3,3'-dithiodipropionate, DTSP, 97%	57757-57-0
440927	N-Succinimidyl-4-formylbenzoate P-formylbenzoic acid n-hydroxysuccinimide ester, 98%	60444-78-2
444282	N-Succinimidyl iodoacetate, 95%	39028-27-8
467057	N-Succinimidyl-4-(maleimidomethyl)cyclohexane-1-carboxylate, SMCC, 99%	64987-85-5
253343	Sulfo-SMCC sodium, 95%	92921-24-9

## ■ Protein Purification Reagents

Cat. No.	Description	Loading Capacity
1876787	AbCap A 4FF	> 40mg human IgG
1876790	AbCap G 4FF	> 30 mg human IgG
1876815	Butyl beads 4FF	7 mg IgG, 26 mg HAS
1876812	CM beads 6FF	0.09 - 0.13 mmol H <sup>+</sup>
1876810	DEAE beads 6FF	0.11 - 0.16 mmol Cl <sup>-</sup>
1880139	Glutathione beads	> 20 mg glutathione
1880140	Glutathione beads 4FF	almost 10 mg glutathione
1876784	GSTCap 4FF	almost 10 mg glutathione
1876781	HisCap 6FF	>40 mg 6×His-tagged protein
1876780	HisCap Smart 6FF	10 mg 6×His-tagged protein
1876813	lexCap CM 6FF	0.09 - 0.13 mmol H <sup>+</sup>
1876811	lexCap DEAE 6FF	0.09 - 0.13 mmol H <sup>+</sup>
1876807	lexCap Q 6FF	0.18 - 0.25 mmol Cl <sup>-</sup>
1876809	lexCap SP 6FF	0.18 - 0.25 mmol H <sup>+</sup>
1876777	Ni NTA beads 6FF	>40 mg 6×His-tagged protein
1876778	Ni Smart beads	10 mg 6×His-tagged Protein
1876779	Ni Smart beads 6FF	10 mg 6×His-tagged Protein
1876817	Octyl beads 4FF	7 mg BSA

## Reagents for Proteomics Research

Cat. No.	Description	Loading Capacity
1876821	Phenyl beads 6FF (high sub)	36 mg BSA
1876819	Phenyl beads 6FF (low sub)	24 mg BSA
1876806	Q beads 6FF	0.18 - 0.25 mmol Cl <sup>-</sup>
1876785	rProtein A beads	> 40 mg human IgG
1876786	rProtein A beads 4FF	> 40 mg human IgG
1876789	rProtein G beads 4FF	> 30 mg human IgG
1876824	Smartdex G-25, coarse beads	N/A
1876825	Smartdex G-25, medium beads	N/A
1876826	Smartdex G-25, fine beads	N/A
1876808	SP beads 6FF	0.18 - 0.25 mmol H <sup>+</sup>

### ■ Protein Structure Analysis

Cat. No.	Description	CAS
462291	S-Acetylthioglycolic acid N-hydroxysuccinimide ester, 95%	76931-93-6
466475	5-Azido-2-nitrobenzoic acid N-hydroxysuccinimide ester, 97%	60117-35-3
371838	(+)-Biotinamidohexanoic acid hydrazide, 90%	109276-34-8
992749	1-Chlorobutane, 99.5%, Bioreagent	109-69-3
389641	4-(4-Maleimidophenyl)butyric acid N-hydroxysuccinimide ester, 98%	79886-55-8
287411	N-Acryloxysuccinimide, 99%	38862-24-7
202233	Adipic acid dihydrazide, ADH, 98%	1071-93-8
259379	2-Aminoethanethiol, 97%	60-23-1

# L-Selenomethionine



With the completion of the Human Genome Project (HGP), the focus of biological science has turned from Genomics to Proteomics. The investigation of protein structure and function has emerged as an exciting research area in the post-genome era. Incorporation of selenium atoms into proteins has been a staple method for protein crystallography. Methionine (Met) can be replaced by Selenomethionine (SeMet) in this process by means of isomorphous substitution without any negative effect.

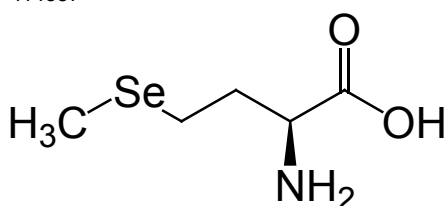
J&K offers high quality products to meet all of your research and manufacturing requirements.

Our products offer:

- High purity and competitive pricing.
- Consistent customer satisfaction.
- Various detection methods to ensure high quality results.
- Reliable supply of sufficient stock ranging from grams to kilograms.

## ■ Product List

114587



MF: C<sub>5</sub>H<sub>11</sub>NO<sub>2</sub>Se  
MW: 196.11  
MP: 265 - 267°C(760 mmHg)  
Specific optical rotation  $[\alpha]_{20/D}$ : +17° to +19.5° (C=1, 1 N HCl)  
HPLC: ≥ 98%  
Water: ≤ 0.5%  
Appearance: White to off-white powder

Cat. No.	Description	CAS
114587	L-Selenomethionine, 98%	3211-76-5

## ■ Other products

Cat. No.	Description	CAS
929073	Dabsyl chloride, DABS-Cl, 98%	56512-49-3
164579	5-Dimethylamino-1-naphthalenesulfonyl chloride, DNSCI, 98%	605-65-2
158799	Poly(ethylene glycol), average M.W. 6,000	25322-68-3
105893	SDS, 99%, for biochemistry	151-21-3
407715	TRIS, 99%	77-86-1

J&K Scientific offers hundreds of stains and dyes to meet your requirements from basic research to manufacturing.

Cat. No.	Description	CAS
615936	Acid Blue 9	3844-45-9
327499	Coomassie Brilliant Blue G, for electrophoresis	6104-58-1
259262	Acid Red 52, C.I. 45100, dye content 75%	3520-42-1
103898	Acridine, 98%	260-94-6
387805	Alizarin complexone	3952-78-1
313292	Alizarin Red S, indicator	130-22-3
915404	Amaranth, dye content 85%	915-67-3
537341	1-Aminoanthraquinone, 98%	82-45-1
299867	5-Aminofluorescein, 95%	3326-34-9
437693	Anthrone, 97%	90-44-8
293619	Basic Fuchsin, 88%, indicator	632-99-5
139939	Benzophenone imine, 98%	1013-88-3
552604	Bromocresol Green, BCG, indicator, ACS reagent	76-60-8
612335	Bromophenol Blue, BPB, indicator	115-39-9
137657	Bromothymol Blue, indicator, ACS reagent	76-59-5
159703	Calcein	1461-15-0
969571	Carbazole, 99%	86-74-8
470741	Croconic acid, 98%	488-86-8
179783	Crystal Violet, high purity biological stain	548-62-9
253078	Crystal violet lactone, 95%	1552-42-7
921105	Curcumin, 98%	458-37-7
446581	3,3'-Diaminobenzidine, DAB, 99%	91-95-2
257173	trans-1,2-Diaminocyclohexane-N,N,N',N'-tetraacetic acid monohydrate, CYDTA, 98%	125572-95-4
223219	2',7'-Dichlorofluorescein	76-54-0
284784	2,6-Dichloroindophenol sodium salt hydrate, DCIP, 98%	620-45-1
249712	2,6-Dichloroindophenol sodium salt hydrate, DCIP, 98%, ACS reagent	620-45-1
377154	1,3-Dihydroxynaphthalene, 97%	132-86-5
288995	3,5-Dihydroxytoluene monohydrate, 98%	6153-39-5
602425	4-Dimethylaminobenzaldehyde, 99%	100-10-7
147601	4-(Dimethylamino)cinnamaldehyde, 98%	6203-18-5
393824	N,N'-Dimethyl-9,9'-bisacridinium nitrate, 95%	2315-97-1
468941	3-(4,5-Dimethyl-2-thiazolyl)-2,5-diphenyl-2H-tetrazolium bromide, MTT, 98%	298-93-1
192752	3,5-Dinitro-2-hydroxybenzoic acid, DNS, 98%	609-99-4
276988	Diphenylamine, 99%	122-39-4
133316	N-(Diphenylmethylene)glycine tert-butyl ester, 98%	81477-94-3
144961	Disperse Red 1, 95%	2872-52-8
371879	Eosin B, high purity biological stain	548-24-3
500224	Ethidium bromide, EB, 95%	1239-45-8
101369	Ethyl Orange sodium salt, 92%, indicator	62758-12-7
487759	Fluorescein disodium salt	518-47-8

# Stains and Dyes



Cat. No.	Description	CAS
194221	Fluorescein isothiocyanate isomer IFITC(isomer I), 85%	3326-32-7
152449	Fluorescein isothiocyanate isomer IFITC(isomer I), 90%	3326-32-7
255493	Fluorescein isothiocyanate isomer IFITC(isomer I), 95%	3326-32-7
266819	Hematoxylin, 90%, indicator	517-28-2
398607	Hoechst 33258, 98%	23491-45-4
269552	Indigo Carmine, high purity biological stain	860-22-0
593562	Indocyanine Green, dye content 90%	3599-32-4
922334	Iodine, 99.5%, extra pure	7553-56-2
149895	Iodine, 99.8%, ACS reagent	7553-56-2
271274	Iodonitrotetrazolium chloride, INT, 99%	146-68-9
552759	Isatin, NSC 9262, 98%	91-56-5
115511	Levodopa, 99%, a natural form of DOPA	59-92-7
937805	Lithium carbonate, 99%, ACS reagent	554-13-2
455634	Chrysoidine G, indicator	532-82-1
913120	Malachite Green, 96%	569-64-2
136692	5-Methoxyisatin, 98%	39755-95-8
912420	Methylene Blue, for biological staining	61-73-4
313050	Methyl Orange, indicator	547-58-0
116480	Methyl Red, indicator	493-52-7
985460	Methyl Yellow, indicator	60-11-7
415304	Mordant Black 17, indicator	2538-85-4
332675	1-Naphthol, 99%	90-15-3
557297	$\alpha$ -Naphtholbenzein	145-50-6
344121	Naringin, 98%	10236-47-2
461707	New Coccine, dye content 75%	2611-82-7
985419	Nile Red, 97.5%	7385-67-3
102914	4-Nitrophthalonitrile, 99%	31643-49-9
151804	Nitrotetrazolium blue chloride, 98%	298-83-9
405095	Perylene, 98%	198-55-0
276473	Phenazine methosulfate, PMS, 99%	299-11-6
600238	Phenol Red, indicator	143-74-8
261286	N-[5-(Phenylamino)-2,4-pentadienyldene]aniline monohydrochloride, 98%	1497-49-0
300617	Phthalocyanine Blue 15, BGS, 95%	147-14-8
308507	Congo Red, indicator	573-58-0
141482	Potassium hydrogen phthalate, KHP, 99%	877-24-7
472860	Resazurin sodium salt, 90%, indicator	62758-13-8
140161	Resorcinol, 99%	108-46-3
196875	Rhodamine 110, 98.5%	13558-31-1
211600	Rhodamine 123, 98%	62669-70-9
151183	Rhodamine 6G, C.I. 45160, 98.5%, indicator	989-38-8
360553	Rose Bengal, C.I. 45440, 90%, indicator	632-69-9
223497	Rubrene, 98.5%	517-51-1

## Stains and Dyes

Cat. No.	Description	CAS
314338	Scopoletin, 98%, from Morus alba L.	92-61-5
226545	Sudan Black B, high purity biological stain	4197-25-5
990366	Tannic acid, ACS reagent	1401-55-4
253583	Tartrazine	1934-21-0
197547	Tetrabromophenol Blue, TBPB, 95%	4430-25-5
981206	N,N,N',N'-Tetramethyl-p-phenylenediamine dihydrochloride, TMPD, 98%	637-01-4
161482	Thioflavin T, 98%	2390-54-7
466126	Thionine acetate, Lauth's violet, 90%, high purity biological stain	78338-22-4
259982	Titan Yellow, indicator	1829-00-1
286719	o-Toluidine, 98.5%	95-53-4
121567	1,3,5-Trihydroxybenzene, 99%	108-73-6
118388	2,3,5-Triphenyl-2H-tetrazolium chloride, 98%	298-96-4
512690	Tris(1,10-phenanthroline)iron(II) sulfate, 0.025 M solution in H <sub>2</sub> O	14634-91-4



# Additives to Polymer Materials

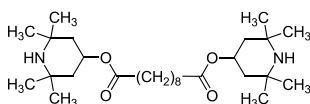


Additives are an important part of working with polymer materials. They can improve the interactions between segments of polymer chains, decrease melting viscosity, slow down and protect against aging or degradation of polymers and so on.

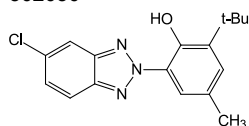
J&K offers various additives including stabilizers, UV absorbers, plasticizers, and flame retardants to meet requirements that range from laboratory bench work to large scale manufacturing.

## ■ Stabilizers and UV Absorbers

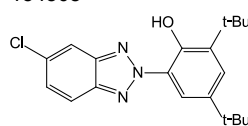
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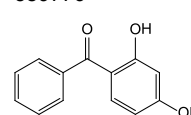
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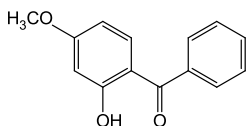
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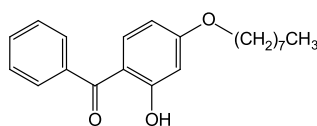
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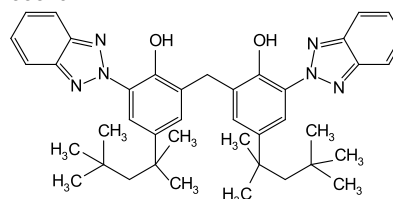
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544933



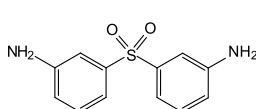
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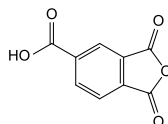
Cat. No.	Description	CAS
182064	Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate, 98%	52829-07-9
302030	2-(5-Chloro-2-benzotriazolyl)-6-tert-butyl-4-cresol, 99%	3896-11-5
154508	2-(3,5-Di-tert-butyl-2-hydroxyphenyl)-5-chlorobenzotriazole, 99%	3864-99-1
589776	2,4-Dihydroxybenzophenone, 99%	131-56-6
328801	2-Hydroxy-4-methoxybenzophenone, 98%	131-57-7
544933	2-Hydroxy-4-(octyloxy)benzophenone, 99%	1843-05-6
338491	2,2'-Methylenebis[6-(2H-benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol], 99%	103597-45-1

## ■ Plasticizers

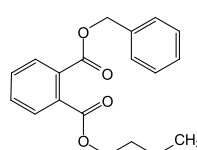
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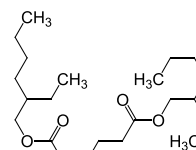
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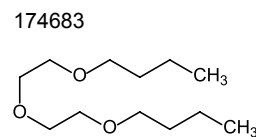
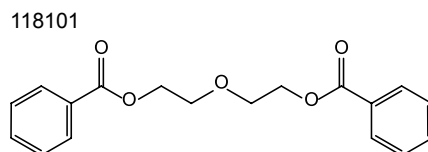
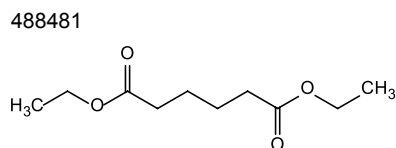
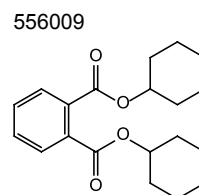
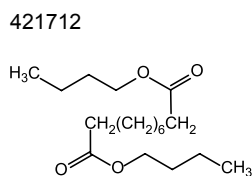
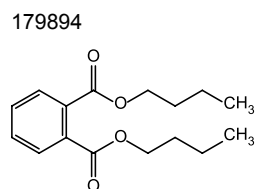
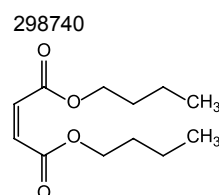
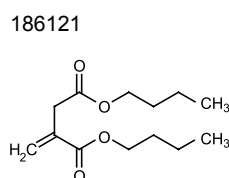
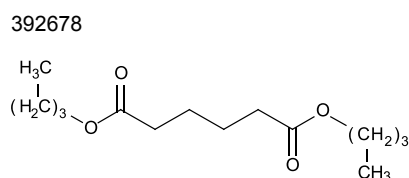
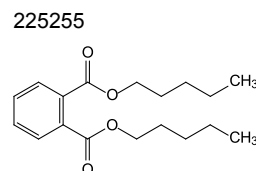
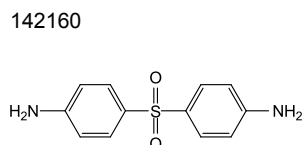
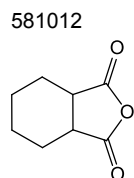
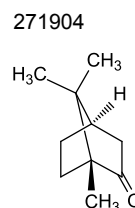
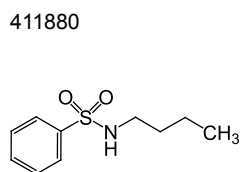
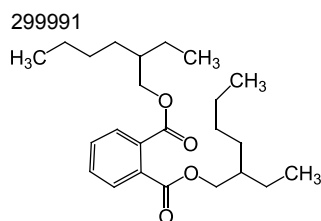
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458300



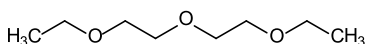
Cat. No.	Description	CAS
225367	3-Aminophenyl sulfone, 98%	599-61-1
350776	1,2,4-Benzenetricarboxylic anhydride, 98%	552-30-7
568570	Benzyl butyl phthalate, 97.5%	85-68-7
458300	Bis(2-ethylhexyl) adipate, 99%	103-23-1



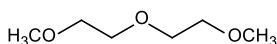
Cat. No.	Description	CAS
299991	Bis(2-ethylhexyl) phthalate, 99%	117-81-7
411880	n-Butylbenzenesulfonamide, 99%	3622-84-2
271904	(1R)-(+)-Camphor, 98%	464-49-3
581012	1,2-Cyclohexanedicarboxylic anhydride, 99%, mixture of cis and trans, trans ≤ 2%	85-42-7
142160	4,4'-Diaminodiphenyl sulfone, 99.5%	80-08-0
225255	Diamyl phthalate, 97%	131-18-0
392678	Dibutyl adipate, 99%	105-99-7
186121	Dibutyl itaconate, 96%, stabilized with HQ	2155-60-4
298740	Dibutyl maleate, 96%	105-76-0
179894	Dibutyl phthalate, 99%	84-74-2
421712	Dibutyl sebacate, 93%	109-43-3
556009	Dicyclohexyl phthalate, 99%	84-61-7
488481	Diethyl adipate, 99%	141-28-6
118101	Di(ethylene glycol) dibenzoate, 98%	120-55-8
174683	Diethylene glycol dibutyl ether, 99%	112-73-2

# Additives to Polymer Materials

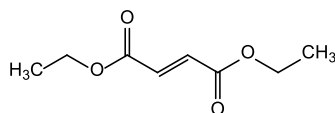
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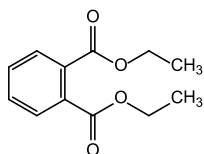
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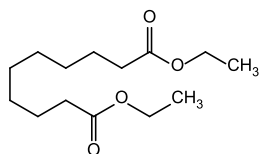
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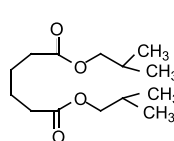
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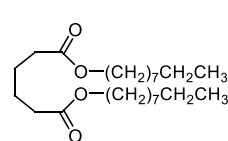
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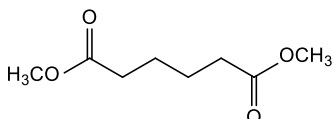
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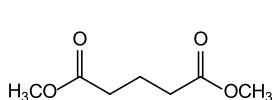
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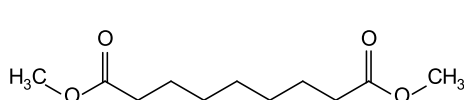
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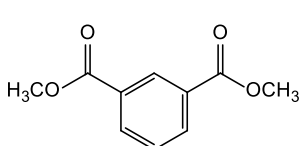
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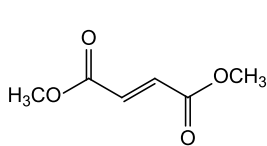
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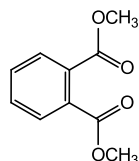
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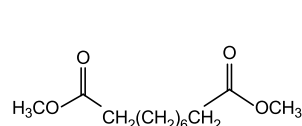
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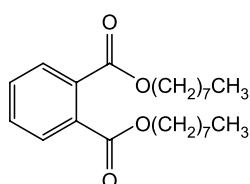
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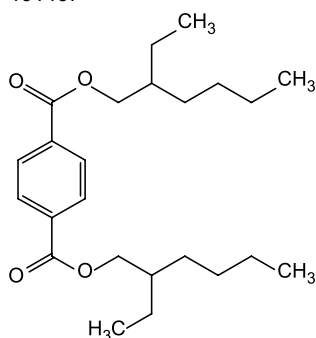
Cat. No.	Description	CAS
129666	Diethylene glycol diethyl ether, 98%	112-36-7
362591	Diethylene glycol dimethyl ether, 99.5%, SuperDry, J&KSeal	111-96-6
567651	Diethyl maleate, 97%	141-05-9
424546	Diethyl phthalate, 99%	84-66-2
532641	Diethyl sebacate, 99%	110-40-7
455933	Diisobutyl adipate, 99%	141-04-8
526458	Diisodecyl adipate	27178-16-1
507996	Dimethyl adipate, 99%	627-93-0
191397	Dimethyl azelate, 99%	1732-10-1
616093	Dimethyl glutarate, 98%	1119-40-0
314080	Dimethyl isophthalate, 99%	1459-93-4
367905	Dimethyl maleate, 96%	624-48-6
586340	Dimethyl phthalate, 99.5%	131-11-3
131645	Dimethyl sebacate, 94%	106-79-6

# Additives to Polymer Materials

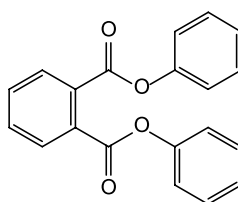
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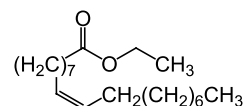
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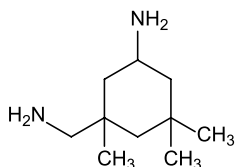
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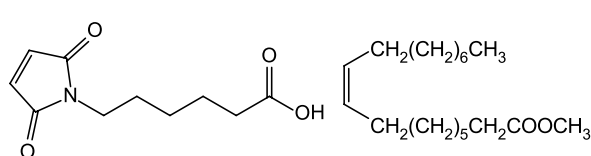
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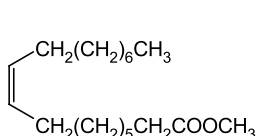
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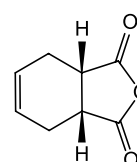
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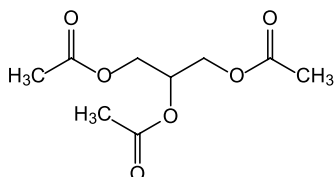
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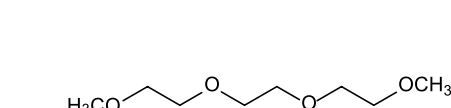
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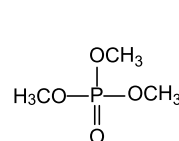
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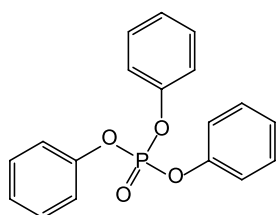
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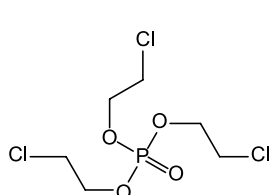
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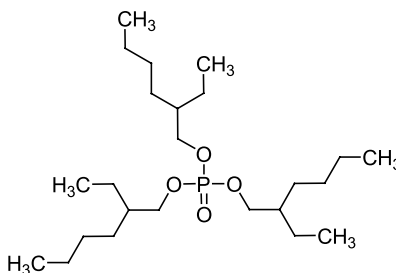
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134519



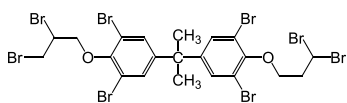
Cat. No.	Description	CAS
361339	Di-n-octyl phthalate, 98%	117-84-0
191467	Dioctyl terephthalate, 99%	6422-86-2
169494	Diphenyl phthalate, 98%	84-62-8
360833	Ethyl oleate, 90%	111-62-6
597230	Isophoronediamine, 99%, mixture of cis and trans	2855-13-2
360723	6-Maleimido hexanoic acid, 98%	55750-53-3
922328	Methyl oleate, 70% tech.	112-62-9
105669	cis-1,2,3,6-Tetrahydrophthalic anhydride, 98%	935-79-5
545473	Triacetin, 99%	102-76-1
395305	Triethylene glycol dimethyl ether, 99%	112-49-2
303179	Trimethyl phosphate, 99%	512-56-1
246559	Triphenylphosphate, 99%	115-86-6
395422	Tris(2-chloroethyl)phosphate, 97%	115-96-8
134519	Tris(2-ethylhexyl) phosphate, 98%	78-42-2

# Additives to Polymer Materials

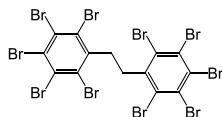


## ■ Flame Retardants

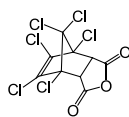
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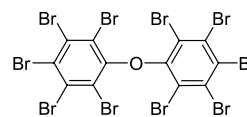
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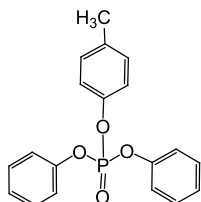
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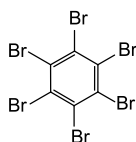
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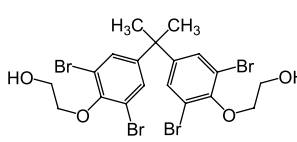
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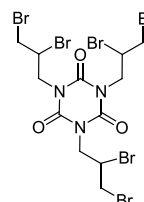
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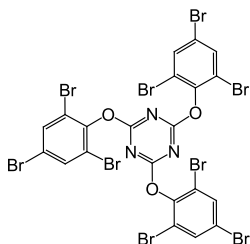
112012



430507



241509

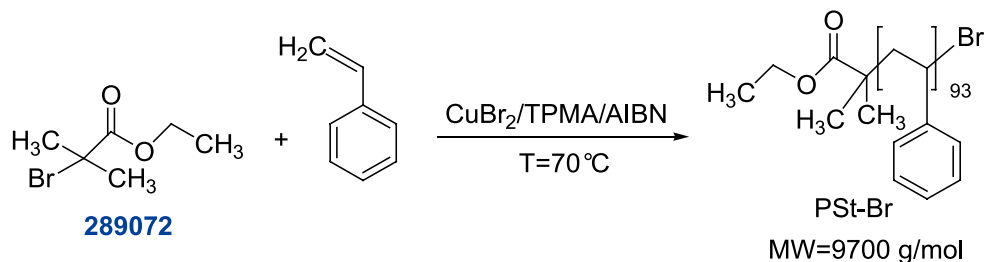


Cat. No.	Description	CAS
523638	2,2-Bis[3,5-dibromo-4-(2,3-dibromopropoxy)phenyl]propane, 95%	21850-44-2
435925	1,2-Bis(2,3,4,5,6-pentabromophenyl) ethane, 96%	84852-53-9
313268	Chlorendic anhydride, 96%	115-27-5
287141	Decabromodiphenyl ether, 99%	1163-19-5
212215	Diphenyl methylphenyl phosphate, 93%	26444-49-5
617600	Hexabromobenzene, 98%	87-82-1
112012	Tetrabromobisphenol A bis(2-hydroxyethyl) ether, 93%	4162-45-2
430507	Tris(2,3-dibromopropyl) isocyanurate, 97%	52434-90-9
241509	2,4,6-Tris-(2,4,6-tribromophenoxy)-1,3,5-triazine, 98%	25713-60-4

The properties and applications of polymers depend not only on molecular weight, but also on molecular shape and composition. ATRP is one of the most powerful modern methods for the synthesis of polymers<sup>[1]</sup>.

ATRP is a radical process, which is much more tolerant to functional groups than the ionic process. It broadens the range of unsaturated molecules that can be polymerized or copolymerized and provides a straightforward opportunity to directly introduce various functionalities into the polymer structure<sup>[2]</sup>.

J&K offers a complete inventory of compounds for ATRP in different package sizes from grams to kilograms. Synthesis of the polystyrene macroinitiator (PSt-Br) using ICAR ATRP in the presence of the TPMA ligand<sup>[3]</sup>.



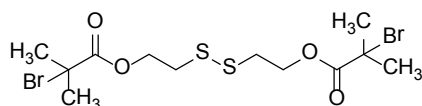
## References

[1] Matyjaszewski, K.; Spanswick, J. *Mat. Today* **2005**, 8, 26-33.

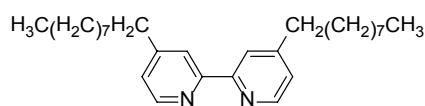
[2] Matyjaszewski, K.; Xia, J. *Chem. Rev.* **2001**, 101, 2921-2990.

[3] Matyjaszewski, K.; Jakubowski, W.; Min, K.; Tang, W.; Huang, J.; Braunecker, W. A.; Tsarevsky, N. V. *Proc. Natl. Acad. Sci.* **2006**, 103, 15309-15314.

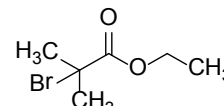
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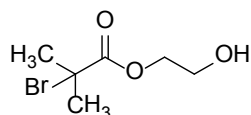
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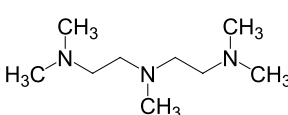
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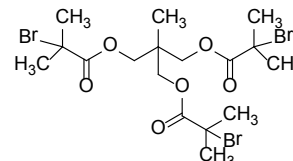
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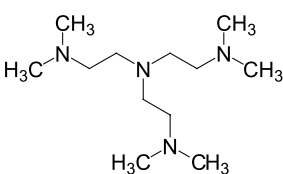
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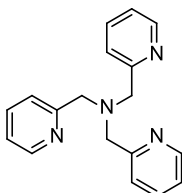
1528412



409824



934562



Cat. No.	Description	CAS
1542193	Bis[2-(2'-bromoisoobutyryloxy)ethyl]disulfide, 97%	817637-79-9
620764	4,4'-Dinonyl-2,2'-dipyridyl, 98%	142646-58-0
289072	Ethyl 2-bromoisoobutyrate, 98%	600-00-0
1473286	2-Hydroxyethyl 2-bromoisoobutyrate, 95%	189324-13-8
293624	1,1,4,7,7-Pentamethyldiethylenetriamine, 98%	3030-47-5
1528412	1,1,1-Tris(2-bromoisoobutyryloxymethyl)ethane, 97%	648898-32-2
409824	Tris(2-dimethylaminoethyl)amine, 99%	33527-91-2
934562	Tris(2-pyridylmethyl)amine, 98%	16858-01-8

# Building Blocks for Organic Semiconductors

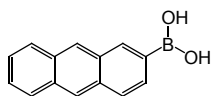


Building blocks such as anthracenes, carbazoles, fluorenes, pyrenes, thiophenes and spirofluorene xanthenes have been widely applied in the synthesis of low molecular weight organic semiconductor materials. These building blocks endow the materials with good thermal stability, excellent charge transfer properties and good luminous performance.

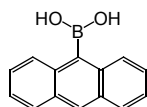
By focusing on the research and development of organic semiconductor materials, J&K is able to offer various building blocks with reliable quality and high performance for laboratory research and large scale manufacturing.

## ■ Anthracenes and Anthraquinones

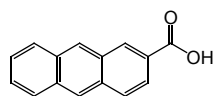
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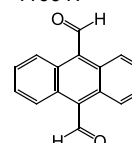
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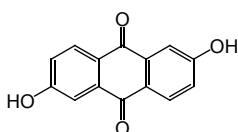
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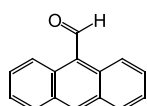
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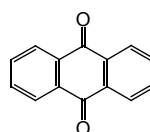
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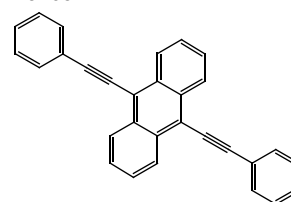
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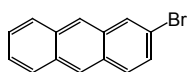
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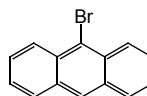
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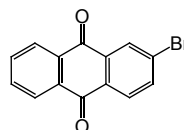
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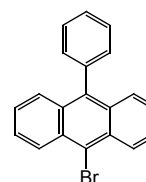
386054



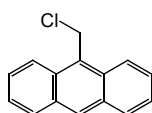
268949



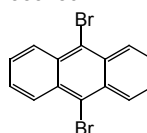
981801



434551



383489

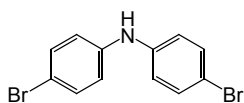


Cat. No.	Description	CAS
626965	2-Anthraceneboronic acid, 97%	141981-64-8
154270	9-Anthraceneboronic acid, 98%	100622-34-2
482703	2-Anthracenecarboxylic acid, 98%	613-08-1
410917	Anthracene-9,10-dicarboxaldehyde, 98%	7044-91-9
435137	Anthraflavic acid, 98%	84-60-6
246883	9-Anthraldehyde, 99%	642-31-9
138194	Anthraquinone, 98%	84-65-1
232052	9,10-Bis(phenylethynyl)anthracene, 98%	10075-85-1
508366	2-Bromoanthracene, 97%	7321-27-9
386054	9-Bromoanthracene, 95%	1564-64-3
268949	2-Bromoanthraquinone, 98%	572-83-8
981801	9-Bromo-10-phenylanthracene, 98%	23674-20-6
434551	9-Chloromethylanthracene, 98%	24463-19-2
383489	9,10-Dibromoanthracene, 95%	523-27-3

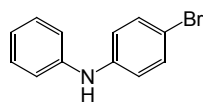
# Building Blocks for Organic Semiconductors

## ■ Arylamines

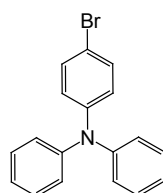
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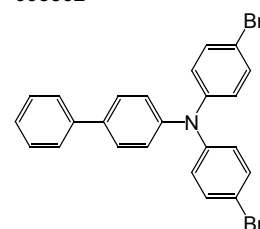
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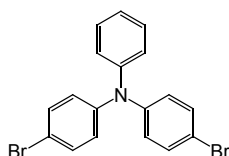
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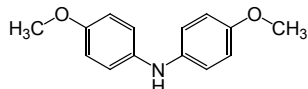
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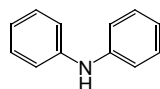
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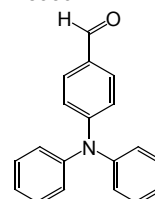
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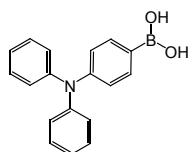
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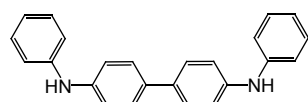
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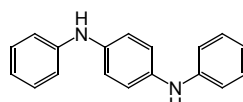
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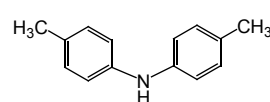
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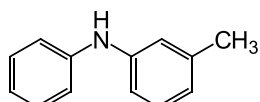
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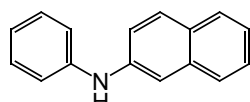
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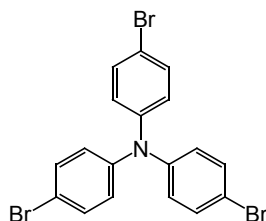
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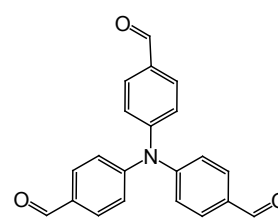
152097



207628



513849



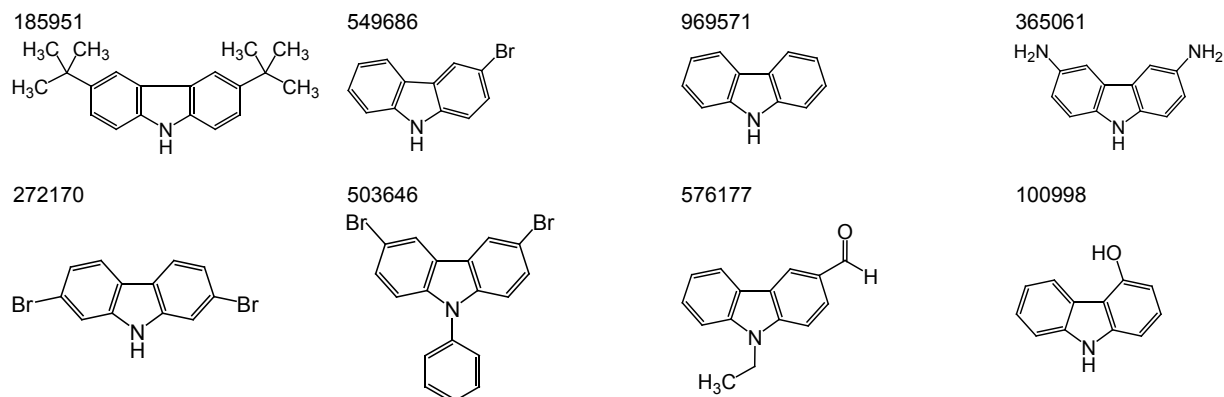
Cat. No.	Description	CAS
194369	Bis(4-bromophenyl)amine, 99%	16292-17-4
556695	4-Bromodiphenylamine, 98%	54446-36-5
557231	4-Bromotriphenylamine, 98%	36809-26-4
698362	4,4'-Dibromo-4''-phenyltriphenylamine, 99%	884530-69-2
242945	4,4'-Dibromotriphenylamine, 98%	81090-53-1
186474	4,4'-Dimethoxydiphenylamine, 98%	101-70-2
276988	Diphenylamine, 99%	122-39-4
189304	4-(N,N-Diphenylamino)benzaldehyde, 98%	4181-05-9
802106	4-(Diphenylamino)phenylboronic acid, 98%	201802-67-7
484031	N,N'-Diphenylbenzidine, 97%	531-91-9
528432	N,N'-Diphenyl-p-phenylenediamine, 95%	74-31-7
542286	p,p'-Ditolylamine, 97%	620-93-9
227682	3-Methyldiphenylamine, 98%	1205-64-7
152097	N-Phenyl-2-naphthylamine, 97%	135-88-6
207628	Tris(4-bromophenyl)amine, 98%	4316-58-9
513849	Tris(4-formylphenyl)amine, 97%	119001-43-3



# Building Blocks for Organic Semiconductors

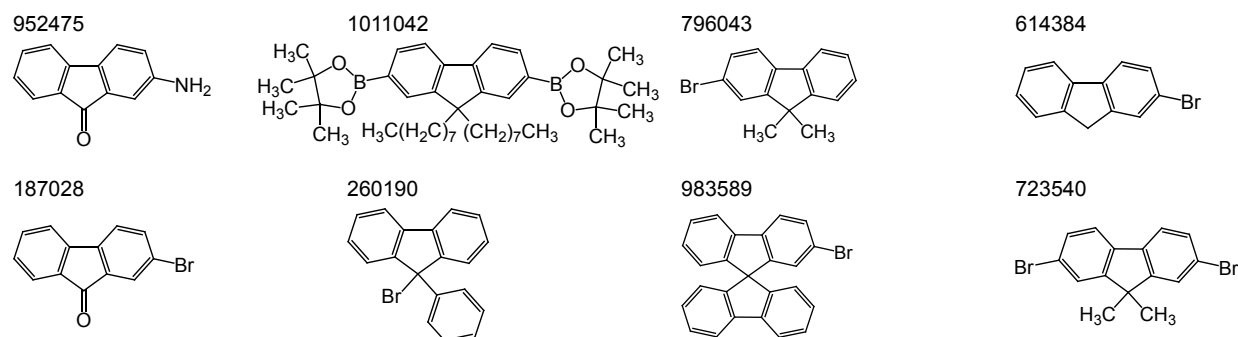


## ■ Carbazoles



Cat. No.	Description	CAS
185951	3,6-Bis(tert-butyl)carbazole, 98%	37500-95-1
549686	3-Bromo-9H-carbazole, 96%	1592-95-6
969571	Carbazole, 99%	86-74-8
365061	3,6-Diaminocarbazole, 98%	86-71-5
272170	2,7-Dibromocarbazole, 98%	136630-39-2
503646	3,6-Dibromo-9-phenylcarbazole, 98%	57103-20-5
576177	N-Ethylcarbazole-3-carboxaldehyde, 98%	7570-45-8
100998	4-Hydroxycarbazole, 98%	52602-39-8

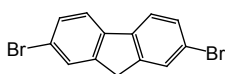
## ■ Fluorenes and Fluorenones



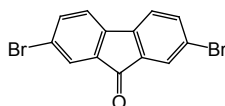
Cat. No.	Description	CAS
952475	2-Amino-9-fluorenone, 97%	3096-57-9
1011042	2,7-Bis(4,4,5,5-tetramethyl-1,3,2-dioxaborolan-2-yl)-9,9-di-n-octylfluorene, 98%	196207-58-6
796043	2-Bromo-9,9'-dimethylfluorene, 99%	28320-31-2
614384	2-Bromofluorene, 95%	1133-80-8
187028	2-Bromo-9-fluorenone, 98%	3096-56-8
260190	9-Bromo-9-phenylfluorene, 98%	55135-66-5
983589	2-Bromo-9,9'-spiro[9H-fluorene], 98%	171408-76-7
723540	2,7-Dibromo-9,9-dimethylfluorene, 98%	28320-32-3

# Building Blocks for Organic Semiconductors

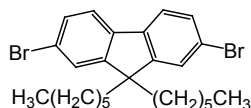
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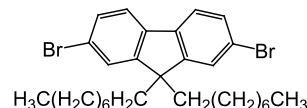
189833



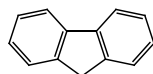
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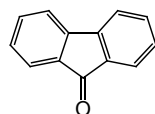
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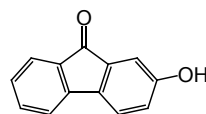
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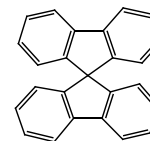
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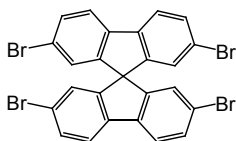
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934531



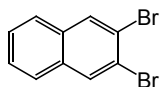
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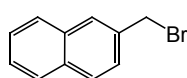
Cat. No.	Description	CAS
130355	2,7-Dibromofluorene, 98%	16433-88-8
189833	2,7-Dibromo-9-fluorenone, 98%	14348-75-5
626203	9,9-Dihexyl-2,7-dibromofluorene, 98%	189367-54-2
626204	9,9-Dioctyl-2,7-dibromofluorene, 98%	198964-46-4
334723	Fluorene, 98%	86-73-7
366077	9-Fluorenone, 99%	486-25-9
314469	2-Hydroxy-9-fluorenone, 97%	6949-73-1
934531	9,9'-Spirobi[9H-fluorene], 97%	159-66-0
934549	2,2',7,7'-Tetrabromo-9,9'-spirobifluorene, 98%	128055-74-3

## ■ Naphthalenes

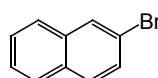
313962



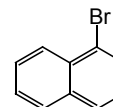
188134



198961



224893

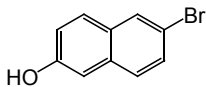


Cat. No.	Description	CAS
313962	2,3-Bibromonaphthalene, 98%	13214-70-5
188134	2-Bromomethyl naphthalene, 96%	939-26-4
198961	2-Bromonaphthalene, 98%	580-13-2
224893	1-Bromonaphthalene, 99%	90-11-9

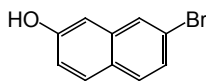
# Building Blocks for Organic Semiconductors



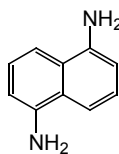
393988



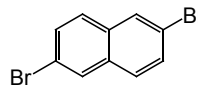
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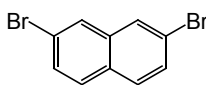
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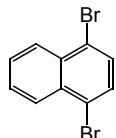
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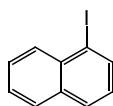
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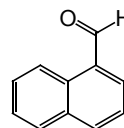
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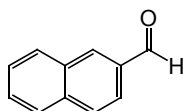
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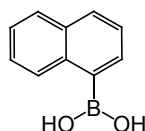
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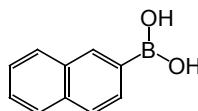
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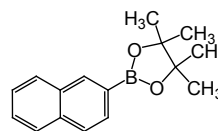
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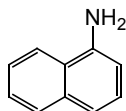
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110560



253305

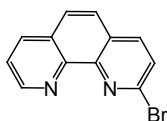


Cat. No.	Description	CAS
393988	6-Bromo-2-naphthol, 98%	15231-91-1
533432	7-Bromo-2-naphthol, 98%	116230-30-9
209271	1,5-Diaminonaphthalene, 97%	2243-62-1
253216	2,6-Dibromonaphthalene, 99%	13720-06-4
381433	2,7-Dibromonaphthalene, 98%	58556-75-5
533901	1,4-Dibromonaphthalene, 99%	83-53-4
174819	1-Iodonaphthalene, 98%	90-14-2
521168	1-Naphthaldehyde, 97%	66-77-3
617687	2-Naphthaldehyde, 98%	66-99-9
260728	1-Naphthaleneboronic acid, 98%	13922-41-3
266475	2-Naphthaleneboronic acid, 98%	32316-92-0
110560	2-Naphthaleneboronic acid pinacol ester, 98%	256652-04-7
253305	1-Naphthylamine, 99%	134-32-7

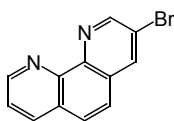
# Building Blocks for Organic Semiconductors

## ■ Phenanthrenes and Phenanthrolines

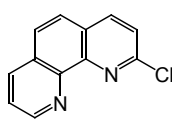
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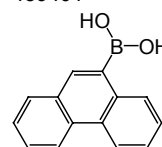
111062



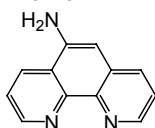
600051



439401



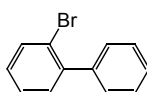
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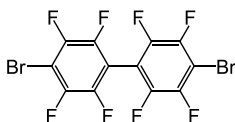
Cat. No.	Description	CAS
1420047	2-Bromo-1,10-phenanthroline, 98%	22426-14-8
111062	3-Bromo-1,10-phenanthroline, 99%	66127-01-3
600051	2-Chloro-1,10-phenanthroline, 98%	7089-68-1
439401	9-Phenanthracenylboronic acid, 98%	68572-87-2
443115	1,10-Phenanthroline-5-amine, 98%	54258-41-2

## ■ Phenyls

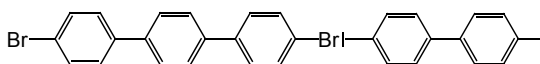
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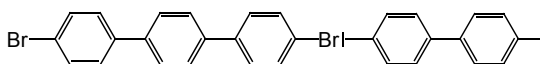
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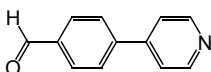
482348



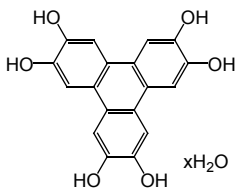
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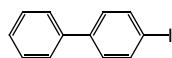
239545



288731



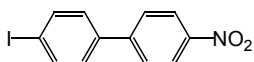
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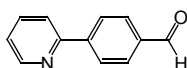
Cat. No.	Description	CAS
405013	2-Bromobiphenyl, 98%	2052-07-5
598612	4,4'-Dibromo-octafluorobiphenyl, 97%	10386-84-2
482348	4,4''-Dibromo-p-terphenyl, 95%	17788-94-2
419643	4,4'-Diiodobiphenyl, 98%	3001-15-8
239545	4-(4-Formylphenyl)pyridine, 97%	99163-12-9
288731	2,3,6,7,10,11-Hexahydroxytriphenylene hydrate, 95%	4877-80-9
510920	4-Iodobiphenyl, 97%	1591-31-7

# Building Blocks for Organic Semiconductors

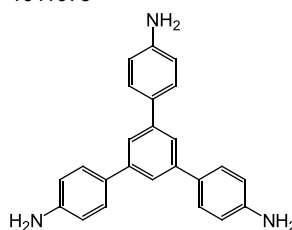
268491



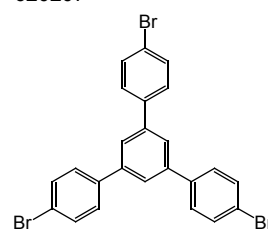
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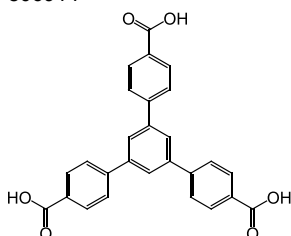
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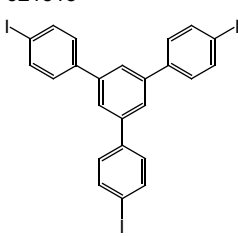
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806914



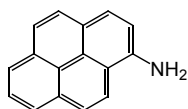
621513



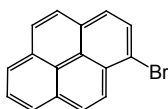
Cat. No.	Description	CAS
268491	4-Iodo-4'-nitrobiphenyl, 98%	29170-08-9
426506	4-(2-Pyridyl)benzaldehyde, 97%	127406-56-8
1011075	1,3,5-Tris(4-aminophenyl)benzene, 98%	118727-34-7
620207	1,3,5-Tris(4-bromophenyl)benzene, 97%	7511-49-1
806914	1,3,5-Tris(4-carboxyphenyl)benzene, 98%	50446-44-1
621513	1,3,5-Tris(4-iodophenyl)benzene, 97%	151417-38-8

## Pyrenes

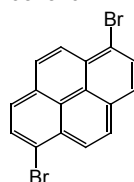
109658



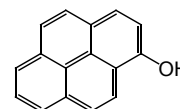
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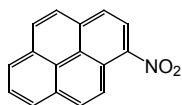
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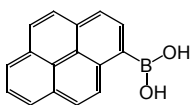
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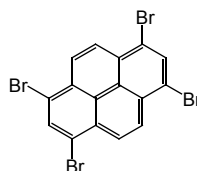
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529996



1156450

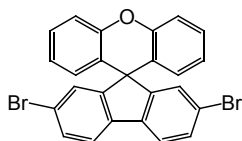


Cat. No.	Description	CAS
109658	1-Aminopyrene, 97%	1606-67-3
340593	1-Bromopyrene, 95%	1714-29-0
981810	1,6-Dibromopyrene, 99%	27973-29-1
951399	1-Hydroxy-pyrene, 98%	5315-79-7
300492	1-Nitropyrene, 98%	5522-43-0
529996	1-Pyreneboronic acid, 96%	164461-18-1
1156450	1,3,6,8-Tetrabromopyrene, 98%	128-63-2

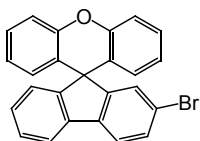
# Building Blocks for Organic Semiconductors

## ■ Spirofluorene Xanthenes (SFX)

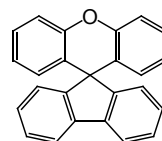
1784535



1784534



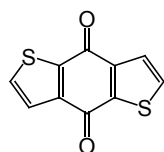
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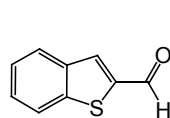
Cat. No.	Description	CAS
1784535	2,7-Bibromospiro[fluorene-9,9'-xanthene], 95%	198142-65-3
1784534	2-Bromospiro[fluorene-9,9'-xanthene], 95%	899422-06-1
1784533	Spiro[fluorene-9,9'-xanthene], 95%	159-62-6

## ■ Thiophenes

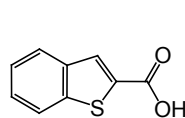
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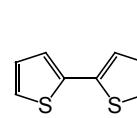
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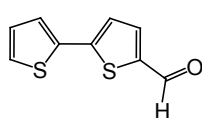
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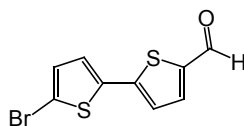
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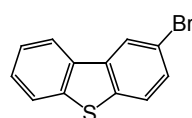
107292



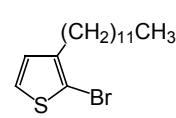
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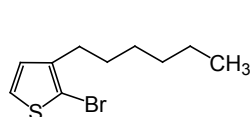
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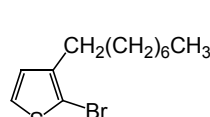
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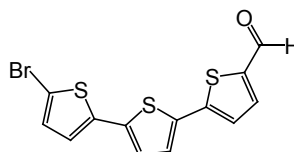
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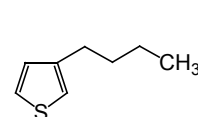
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989431



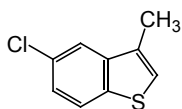
458165



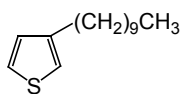
Cat. No.	Description	CAS
1173154	Benzo[1,2-b:4,5-b']dithiophene-4,8-dione, 97%	32281-36-0
329997	Benzo[1,2-b:4,5-b']dithiophene-2-carboxaldehyde, 97%	3541-37-5
250284	Benzo[1,2-b:4,5-b']dithiophene-2-carboxylic acid, 98%	6314-28-9
122487	2,2'-Bithiophene, 98%	492-97-7
107292	2,2'-Bithiophene-5-carboxaldehyde, 98%	3779-27-9
506158	5-Bromo-2,2'-bithiophene-5'-carboxaldehyde, 98%	110046-60-1
205844	2-Bromodibenzothiophene, 95%	22439-61-8
807425	2-Bromo-3-dodecylthiophene, 95%	139100-06-4
807482	2-Bromo-3-hexylthiophene, 98%	69249-61-2
1099067	2-Bromo-3-octylthiophene, 97%	145543-83-5
989431	5''-Bromo-2,2':5',2''-terthiophene-5-carboxaldehyde, 95%	161726-69-8
458165	3-n-Butylthiophene, 98%	34722-01-5

# Building Blocks for Organic Semiconductors

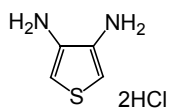
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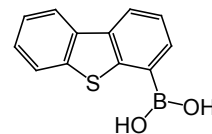
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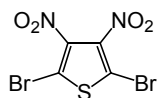
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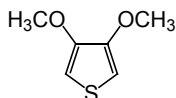
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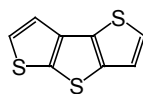
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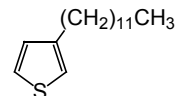
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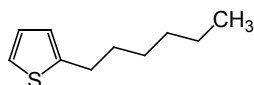
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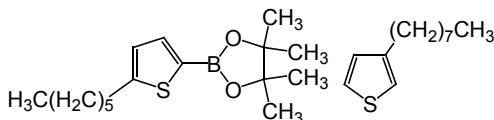
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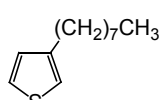
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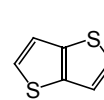
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403519



452539



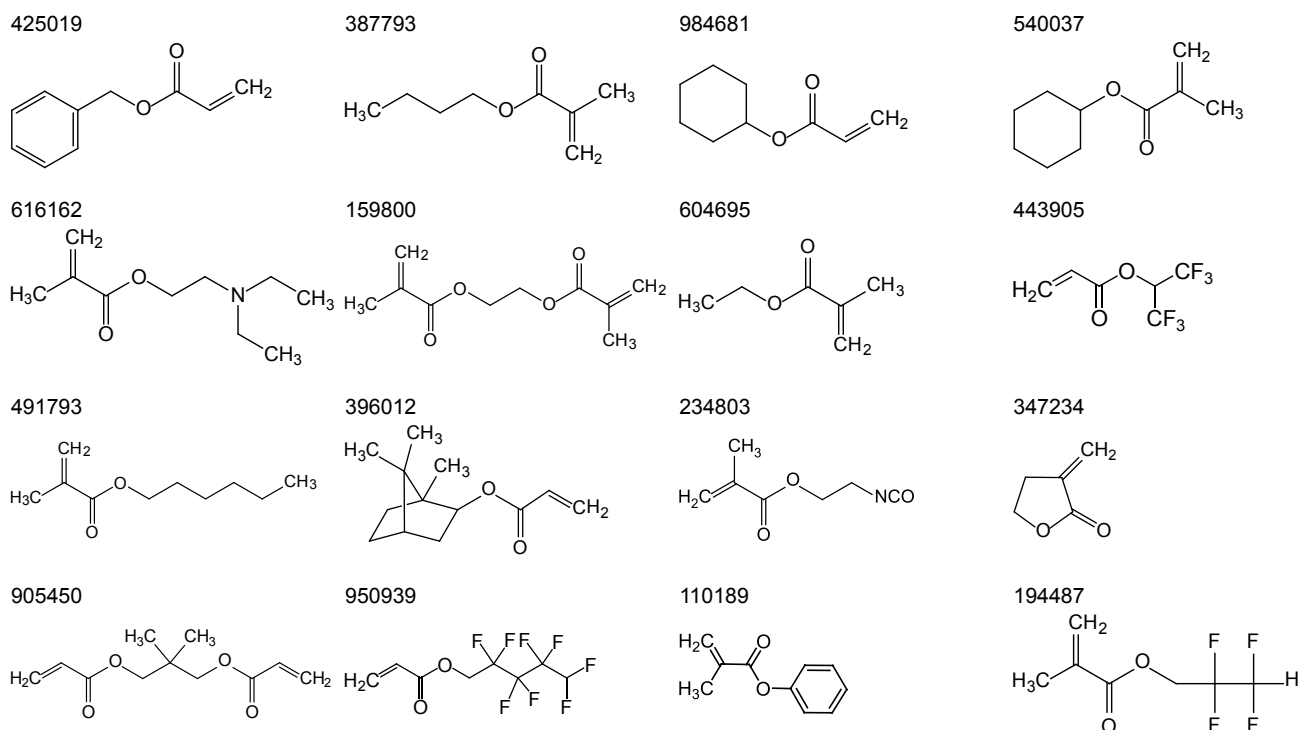
Cat. No.	Description	CAS
218034	5-Chloro-3-methylbenzothiophene, 97%	19404-18-3
567659	3-Decylthiophene, 98%	65016-55-9
517268	3,4-Diaminothiophene dihydrochloride, 97%	90069-81-1
620822	Dibenzothiophene-4-boronic acid, 98%	108847-20-7
150005	2,5-Dibromo-3,4-dinitrothiophene, 98%	52431-30-8
348273	3,4-Dimethoxythiophene, 98%	51792-34-8
196753	Dithieno[2,3-b:2',3'-d]thiophene, 98%	3593-75-7
104299	3-Dodecylthiophene, 98%	104934-52-3
523500	2-Hexylthiophene, 98%	18794-77-9
807636	5-Hexyl-2-thiopheneboronic acid pinacol ester, 96%	917985-54-7
403519	3-Octylthiophene, 98.5%	65016-62-8
452539	Thieno[3,2-b]thiophene, 98%	251-41-2

# Monomers for Polymer Materials

A monomer is a molecule that may bind chemically or supramolecularly to other molecules to form a (supramolecular) polymer. They are the most important raw components for polymer materials. The many different functions of monomers have caused polymer materials to prove useful not only in transferring, converting or storing energy and information, but also in chemical reactivity, photosensitivity, electrical conductivity, biocompatibility, and so on.

J&K offers multitudinous monomers including acrylics, epoxies, amides and styrenes for applications ranging from bench work to large scale manufacturing. These products offer reliable quality and high performance at competitive prices.

## ■ Acrylic Monomers

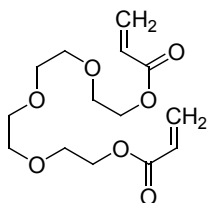


Cat. No.	Description	CAS
425019	Benzyl acrylate, 98%	2495-35-4
387793	Butyl methacrylate, 99%, stabilized with MEHQ	97-88-1
984681	Cyclohexyl acrylate, 98%	3066-71-5
540037	Cyclohexyl methacrylate, 98%, stabilized with 50 ppm MEHQ	101-43-9
616162	2-(Diethylamino)ethyl methacrylate, 99.5%, stabilized with MEHQ	105-16-8
159800	Ethylene glycol dimethacrylate, 98%, stabilized with 100 ppm MEHQ	97-90-5
604695	Ethyl methacrylate, 99%, stabilized with MEHQ	97-63-2
443905	1,1,1,3,3,3-Hexafluoroisopropyl acrylate, 99%, stabilized with MEHQ	2160-89-6
491793	Hexyl methacrylate, 97.5%, stabilized with 100 ppm MEHQ	142-09-6
396012	Isobornyl acrylate, 93%, stabilized with 200 - 400 ppm MEHQ	5888-33-5
234803	2-Isocyanatoethyl methacrylate, 98%, stabilized with BHT	30674-80-7
347234	$\alpha$ -Methylene- $\gamma$ -butyrolactone, 95%	547-65-9
905450	Neopentyl glycol diacrylate, 95%, stabilized with MEHQ	2223-82-7
950939	2,2,3,3,4,4,5,5-Octafluoropentyl acrylate, 98%, stabilized with MEHQ	376-84-1
110189	Phenyl methacrylate, 95%	2177-70-0
194487	2,2,3,3-Tetrafluoropropyl methacrylate, 98%	45102-52-1

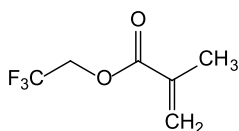


# Monomers for Polymer Materials

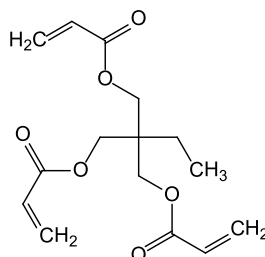
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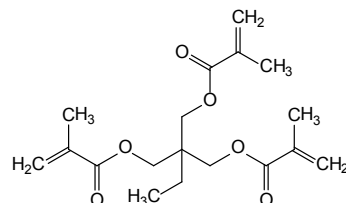
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992571



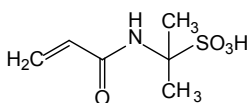
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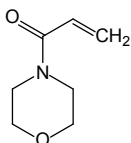
Cat. No.	Description	CAS
193524	Tetramethylene glycol diacrylate, 90%	17831-71-9
979840	2,2,2-Trifluoroethyl methacrylate, 99%, stabilized with 100 ppm MEHQ	352-87-4
992571	Trimethylolpropane triacrylate, 85%, stabilized with MEHQ	15625-89-5
496960	Trimethylolpropane trimethacrylate, 90%	3290-92-4

## ■ Acrylamide Monomers

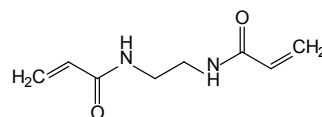
584035



267132



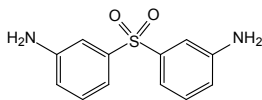
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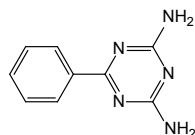
Cat. No.	Description	CAS
584035	2-Acrylamido-2-methylpropanesulfonic acid, 98%	15214-89-8
267132	4-Acryloylmorpholine, 98%	5117-12-4
205498	N,N'-Ethylenebis(acrylamide), 97%	2956-58-3

## ■ Amine Monomers

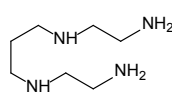
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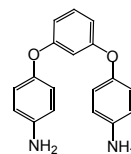
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480917



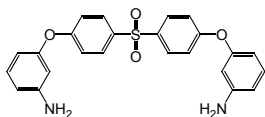
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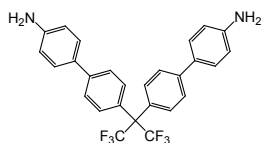
Cat. No.	Description	CAS
225367	3-Aminophenyl sulfone, 98%	599-61-1
263901	Benzoguanamine, 99%	91-76-9
480917	N,N'-Bis(2-aminoethyl)-1,3-propanediamine, 97%	4741-99-5
213939	1,3-Bis(4-aminophenoxy)benzene, 98%	2479-46-1

# Monomers for Polymer Materials

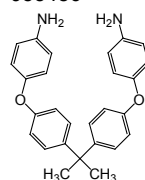
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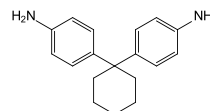
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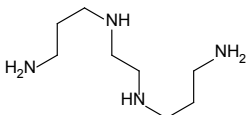
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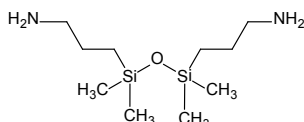
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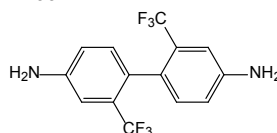
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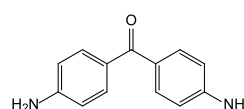
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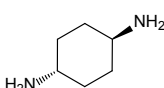
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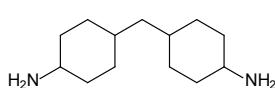
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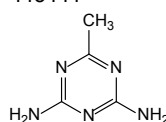
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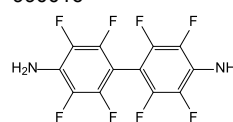
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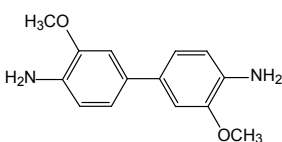
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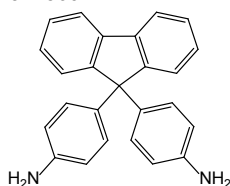
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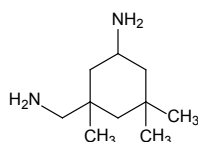
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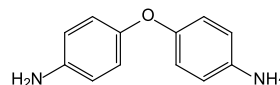
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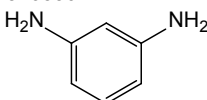
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227156



320330

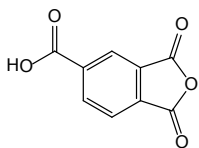


Cat. No.	Description	CAS
390584	4,4'-Bis(3-aminophenoxy)diphenyl sulfone, 98%	30203-11-3
314486	2,2-Bis[4-(4-aminophenoxy)phenyl]hexafluoropropane, 99%	69563-88-8
955486	2,2-Bis[4-(4-aminophenoxy)phenyl]propane, 98%	13080-86-9
578213	1,1-Bis(4-aminophenyl)cyclohexane, 98%	3282-99-3
581284	1,2-Bis(3-aminopropylamino)ethane, 96%	10563-26-5
444054	1,3-Bis(3-aminopropyl)tetramethyldisiloxane, 97%	2469-55-8
126674	2,2'-Bis(trifluoromethyl)benzidine, 99%	341-58-2
405273	4,4'-Diaminobenzophenone, 98%	611-98-3
111504	trans-1,4-Diaminocyclohexane, 98%	2615-25-0
112519	4,4'-Diaminodicyclohexylmethane, 98%	1761-71-3
445441	2,4-Diamino-6-methyl-1,3,5-triazine, 98%	542-02-9
990016	4,4'-Diamino-octafluorobiphenyl, 98%	1038-66-0
472252	o-Dianisidine, 98%	119-90-4
542560	4,4'-(9-Fluorenylidene)dianiline, 98%	15499-84-0
597230	Isophoronediamine, 99%, mixture of cis and trans	2855-13-2
227156	4,4'-Oxydianiline, 98%	101-80-4
320330	m-Phenylenediamine, 99%	108-45-2

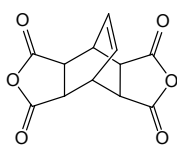
# Monomers for Polymer Materials

## ■ Anhydride Monomers

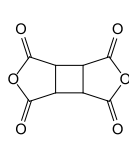
350776



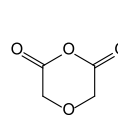
122446



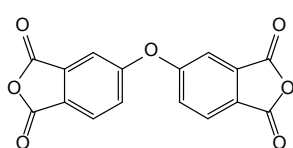
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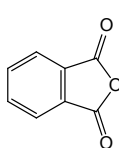
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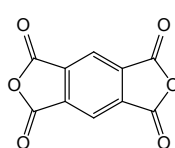
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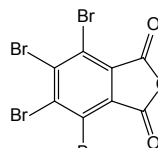
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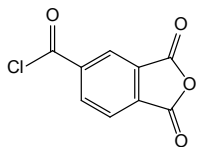
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277765



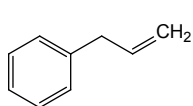
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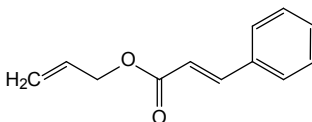
Cat. No.	Description	CAS
350776	1,2,4-Benzenetricarboxylic anhydride, 98%	552-30-7
122446	Bicyclo[2.2.2]oct-7-ene-2,3,5,6-tetracarboxylic dianhydride, 98%	1719-83-1
236897	Cyclobutane-1,2,3,4-tetracarboxylic dianhydride, 98%	4415-87-6
440599	Diglycolic anhydride, 97%	4480-83-5
454140	4,4'-Oxydiphthalic anhydride, 99%	1823-59-2
906637	Phthalic anhydride, 99%	85-44-9
317760	Pyromellitic dianhydride, 99.5%	89-32-7
277765	Tetrabromophthalic anhydride, 98%	632-79-1
297182	Trimellitic anhydride chloride, 99%	1204-28-0

## ■ Allyl Monomers

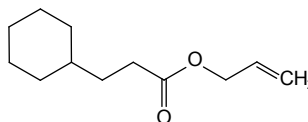
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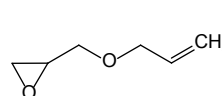
365608



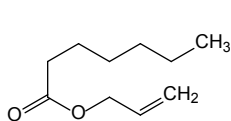
169250



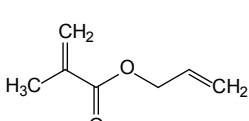
221415



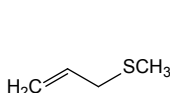
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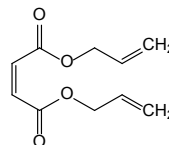
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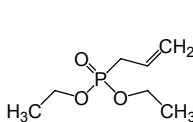
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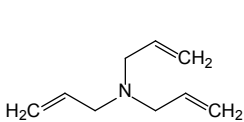
148965



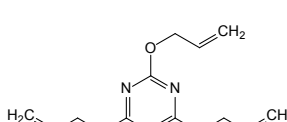
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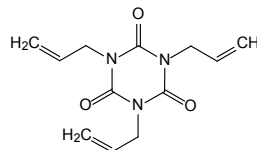
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116125



246331

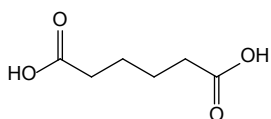


# Monomers for Polymer Materials

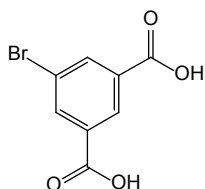
Cat. No.	Description	CAS
209470	Allylbenzene, 98%	300-57-2
365608	Allyl cinnamate, 99%, stabilized with 100 ppm TBC	1866-31-5
169250	Allyl cyclohexanepropionate, 98%	2705-87-5
221415	Allyl glycidyl ether, 99%	106-92-3
447480	Allyl heptanoate, 98%	142-19-8
365820	Allyl methacrylate, 99%, stabilized with MEHQ	96-05-9
130363	Allyl methyl sulfide, 99%	10152-76-8
148965	Diallyl maleate, 95%	999-21-3
471489	Diethyl allylphosphonate, 97%	1067-87-4
193499	Triallylamine, 99%	102-70-5
116125	2,4,6-Triallyloxy-1,3,5-triazine, 99%	101-37-1
246331	1,3,5-Triallyl-1,3,5-triazine-2,4,6(1H,3H,5H)-trione, 98%, stabilized with MEHQ	1025-15-6

## ■ Carboxylic Acid Monomers

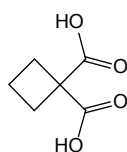
228657



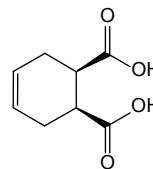
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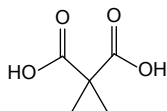
380229



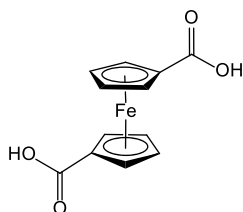
109392



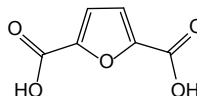
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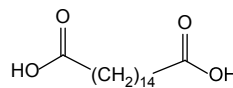
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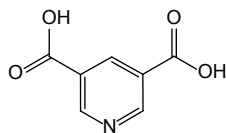
312727



589931



204388

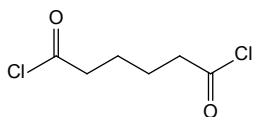


Cat. No.	Description	CAS
228657	Adipic acid, 99%	124-04-9
125051	5-Bromoisophthalic acid, 96%	23351-91-9
380229	1,1-Cyclobutanedicarboxylic acid, 99%	5445-51-2
109392	cis-4-Cyclohexene-1,2-dicarboxylic acid, 98%	2305-26-2
606006	1,1-Cyclopropanedicarboxylic acid, 98%	598-10-7
164910	1,1'-Ferrocenedicarboxylic acid, 97%	1293-87-4
312727	2,5-Furandicarboxylic acid, 97%	3238-40-2
589931	Hexadecanedioic acid, 97%	505-54-4
204388	3,5-Pyridinedicarboxylic acid, 97.5%	499-81-0

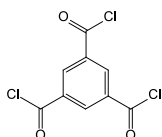
# Monomers for Polymer Materials

## ■ Dicarboxylic Acid Chloride Monomers

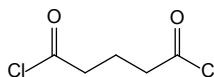
401728



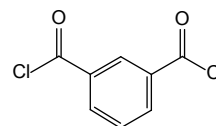
452019



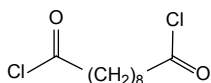
506261



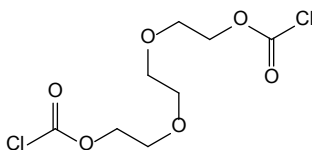
201616



445162



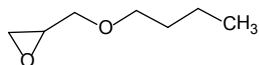
100944



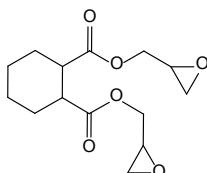
Cat. No.	Description	CAS
401728	Adipoyl chloride, 98%	111-50-2
452019	1,3,5-Benzenetricarbonyl trichloride, 99%	4422-95-1
506261	Glutaryl dichloride, 97%	2873-74-7
201616	Isophthaloyl dichloride, 98%	99-63-8
445162	Sebacoyl chloride, 92%, tech.	111-19-3
100944	Tri(ethylene glycol) bis(chloroformate), 97%	17134-17-7

## ■ Epoxide Monomers

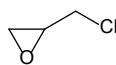
381447



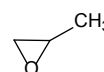
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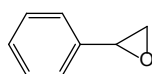
990631



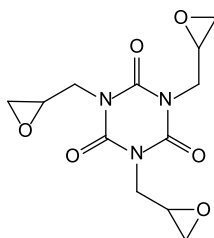
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608281



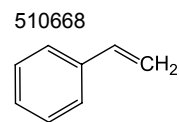
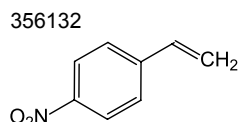
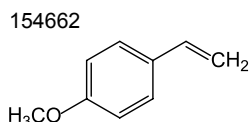
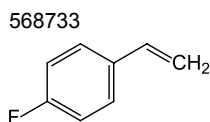
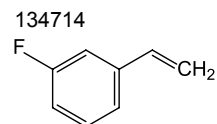
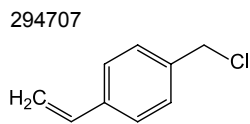
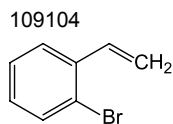
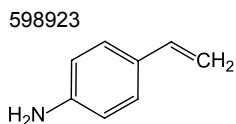
389893



Cat. No.	Description	CAS
381447	Butyl glycidyl ether, 98%	2426-08-6
217466	Diglycidyl 1,2-cyclohexanedicarboxylate, 95%	5493-45-8
990631	Epichlorohydrin, 99%	106-89-8
155975	Propylene oxide, 99.5%	75-56-9
608281	Styrene oxide, 97.5%	96-09-3
389893	Triglycidyl isocyanurate, epoxy equivalent: 87 - 111 g/Eq	2451-62-9

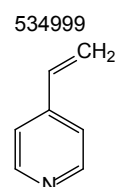
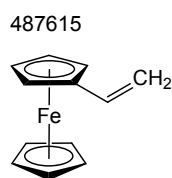
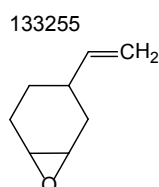
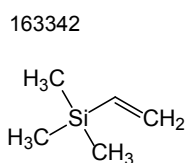
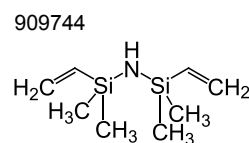
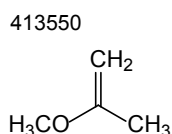
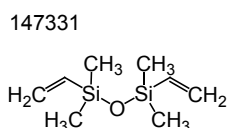
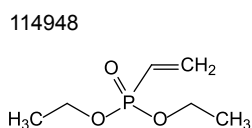
# Monomers for Polymer Materials

## ■ Styrene Monomers



Cat. No.	Description	CAS
598923	4-Aminostyrene, 96%, stabilized with TBC	1520-21-4
109104	2-Bromostyrene, 97%, stabilized with 0.05% TBC	2039-88-5
294707	4-(Chloromethyl)styrene, 90%, stabilized	1592-20-7
134714	3-Fluorostyrene, 97%	350-51-6
568733	4-Fluorostyrene, 97%	405-99-2
154662	4-Methoxystyrene, 95%, stabilized	637-69-4
356132	4-Nitrostyrene, 95%	100-13-0
510668	Styrene, 99.5%, stabilized with HQ	100-42-5

## ■ Vinyl Monomers



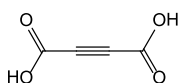
Cat. No.	Description	CAS
114948	Diethyl vinylphosphonate, 97%	682-30-4
147331	Divinyltetramethyl disiloxane, 97%	2627-95-4
413550	2-Methoxypropene, 97%, stabilized	116-11-0
909744	1,1,3,3-Tetramethyl-1,3-divinylsilazane, 97%	7691-02-3
163342	Trimethyl(vinyl)silane, 97%	754-05-2
133255	4-Vinyl-1-cyclohexene 1,2-epoxide, 99%, mixture of isomers	106-86-5
487615	Vinylferrocene, 97%	1271-51-8
534999	4-Vinylpyridine, 95%, stabilized with HQ	100-43-6

# Organic Linkers for MOFs

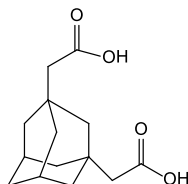
Metal Organic Frameworks (MOFs) are compounds that form a class of crystalline materials with periodic network structures. They consist of inorganic metal centers (metal ions or metal clusters) coordinated to organic linkers. Due to their multiformity, porosity, tailorability and large specific surface area, they have attracted immense attention in many research areas such as gas adsorption storage, molecular separation, catalysis, sustained-release drugs and photoelectricity.

J&K provides organic linkers with high purity and reliable quality that are applicable to MOFs to help chemists realize their innovative ideas.

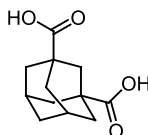
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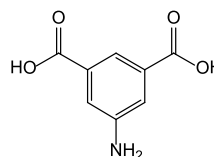
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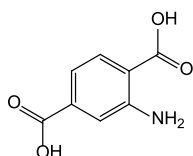
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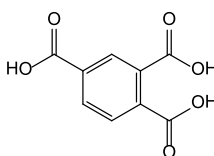
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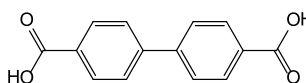
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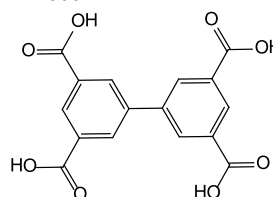
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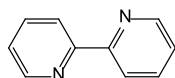
276441



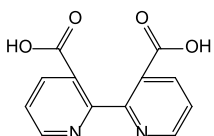
1415094



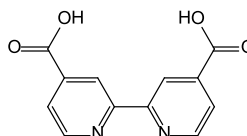
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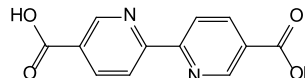
620689



205286

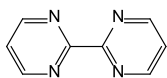


620880

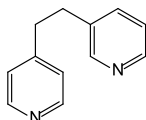


Cat. No.	Description	CAS
404950	Acetylenedicarboxylic acid, 98%	142-45-0
476032	1,3-Adamantanedicarboxylic acid, 97%	17768-28-4
380913	1,3-Adamantanedicarboxylic acid, 97%	39269-10-8
219978	5-Aminoisophthalic acid, 98%	99-31-0
328187	2-Aminoterephthalic acid, 99%	10312-55-7
159403	1,2,4-Benzenetricarboxylic acid, 98%	528-44-9
276441	Biphenyl-4,4'-dicarboxylic acid, 98%	787-70-2
1415094	Biphenyl-3,3',5,5'-tetracarboxylic acid, 99%	4371-28-2
107095	2,2'-Bipyridine, 99%	366-18-7
620689	2,2'-Bipyridine-3,3'-dicarboxylic acid, 97%	4433-01-6
205286	2,2'-Bipyridine-4,4'-dicarboxylic acid, 98%	6813-38-3
620880	2,2'-Bipyridine-5,5'-dicarboxylic acid, 98%	1802-30-8

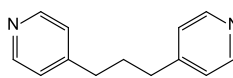
264465



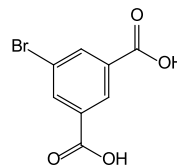
564995



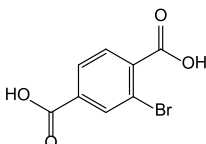
313240



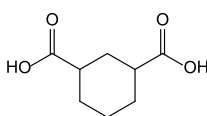
125051



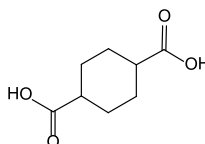
390779



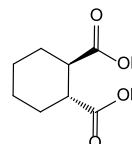
339503



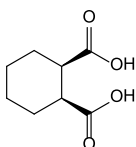
136483



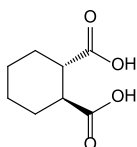
138312



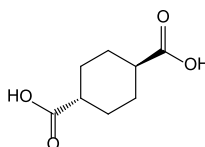
431496



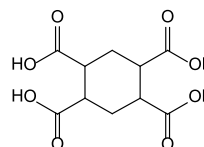
459655



293913



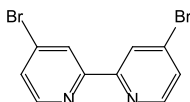
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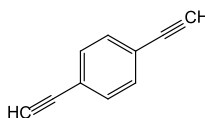
129882



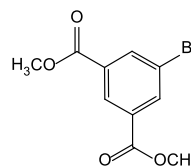
830968



910456



465769

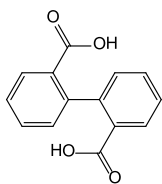


Cat. No.	Description	CAS
264465	2,2'-Bipyrimidyl, 97%	34671-83-5
564995	1,2-Bis(4-pyridyl)ethane, 96%	4916-57-8
313240	1,3-Bis(4-pyridyl)propane, 97%	17252-51-6
125051	5-Bromoisophthalic acid, 96%	23351-91-9
390779	2-Bromoterephthalic acid, 97.5%	586-35-6
339503	1,3-Cyclohexanedicarboxylic acid, 98%, mixture of cis and trans	3971-31-1
136483	1,4-Cyclohexanedicarboxylic acid, 99%, mixture of cis and trans	1076-97-7
138312	(1R,2R)-1,2-Cyclohexanedicarboxylic acid, 99%	46022-05-3
431496	cis-1,2-Cyclohexanedicarboxylic acid, 98%	610-09-3
459655	trans-1,2-Cyclohexanedicarboxylic acid, 98%	2305-32-0
293913	trans-1,4-Cyclohexanedicarboxylic acid, 97%	619-82-9
620007	Cyclohexane-1,2,4,5-tetracarboxylic acid, 98%	15383-49-0
129882	1,4-Diazabicyclo[2.2.2]octane, 97%	280-57-9
830968	5,5'-Dibromo-2,2'-bipyridine, 97%	15862-18-7
910456	1,4-Diethynylbenzene, 97%	935-14-8
465769	Dimethyl 5-bromoisophthalate, 98%	51760-21-5

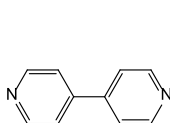


# Organic Linkers for MOFs

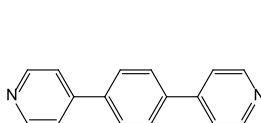
524047



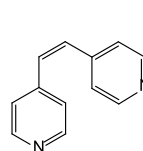
297602



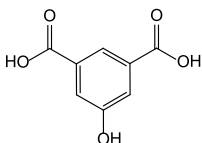
1685414



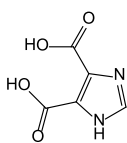
226692



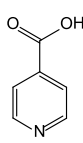
507784



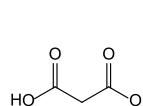
493510



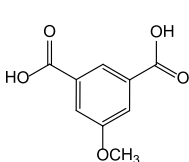
140345



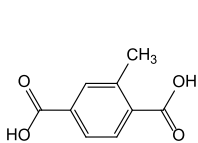
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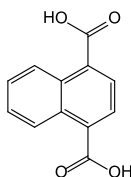
312768



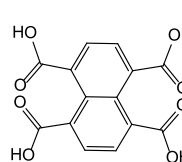
1164021



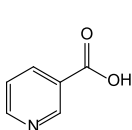
222263



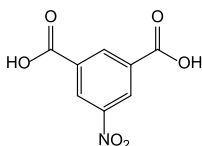
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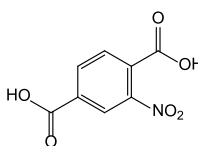
978096



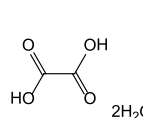
573005



128551

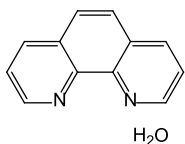


364481

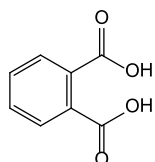


Cat. No.	Description	CAS
524047	Diphenic acid, 96%	482-05-3
297602	4,4'-Dipyridyl, 99%	553-26-4
1685414	1,4-Di(4-pyridyl)benzene, 98%	113682-56-7
226692	1,2-Di(4-pyridyl)ethylene, 98%	13362-78-2
507784	5-Hydroxyisophthalic acid, 99%	618-83-7
493510	4,5-Imidazoledicarboxylic acid, 99%	570-22-9
140345	Isonicotinic acid, 99%	55-22-1
302967	Malonic acid, 99.5%	141-82-2
312768	5-Methoxyisophthalic acid, 98%	46331-50-4
1164021	2-Methylterephthalic acid, 98%	5156-01-4
222263	1,4-Naphthalenedicarboxylic acid, 98%	605-70-9
104031	1,4,5,8-Naphthalenetetracarboxylic acid, 60%, mixture of monoanhydride	128-97-2
978096	Nicotinic acid, 99.5%	59-67-6
573005	5-Nitroisophthalic acid, 99%	618-88-2
128551	Nitroterephthalic acid, 98%	610-29-7
364481	Oxalic acid dihydrate, 99.5%, ACS reagent	6153-56-6

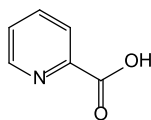
347052



346018



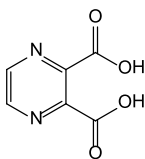
109226



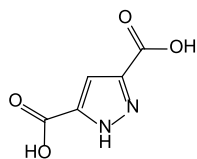
557311



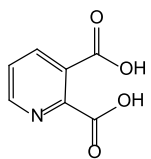
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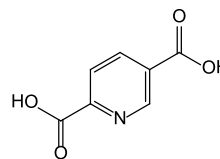
163376



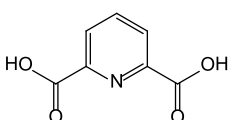
109200



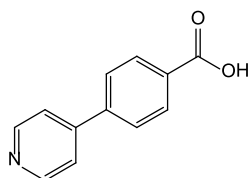
134005



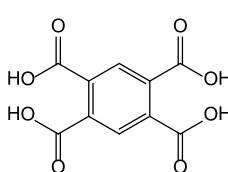
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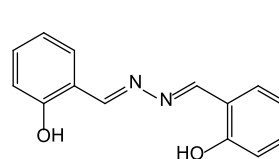
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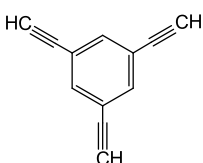
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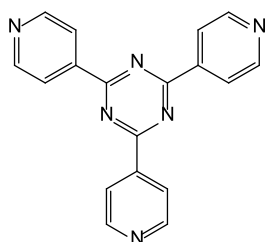
512391



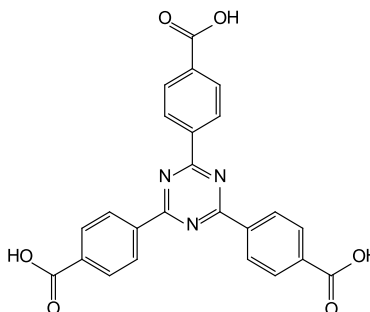
348905



240314



493973



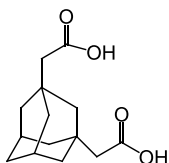
Cat. No.	Description	CAS
347052	1,10-Phenanthroline monohydrate, 99%	5144-89-8
346018	Phthalic acid, 99%	88-99-3
109226	2-Picolinic acid, 99%	98-98-6
557311	Pyrazine, 99%	290-37-9
344605	2,3-Pyrazinedicarboxylic acid, 98%	89-01-0
163376	3,5-Pyrazoledicarboxylic acid, 98%	3112-31-0
109200	2,3-Pyridinedicarboxylic acid, 99%	89-00-9
134005	2,5-Pyridinedicarboxylic acid, 98%	100-26-5
113992	2,6-Pyridinedicarboxylic acid, 99%	499-83-2
495317	4-(4-Pyridyl)benzoic acid, 99%	4385-76-6
452155	Pyromellitic acid, 96%	89-05-4
512391	Salicylaldehyde azine, 98%	959-36-4
348905	1,3,5-Triethynylbenzene, 98%	7567-63-7
240314	2,4,6-Tri(4-pyridyl)-1,3,5-triazine, 98%	42333-78-8
493973	2,4,6-Tris(4-carboxyphenyl)-1,3,5-triazine, 98%	61414-16-2

# Reagents for Photoresists Synthesis

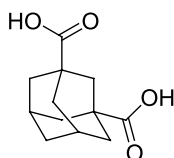
Photoresists are widely used in integrated circuits, semiconductor devices, touch screens and photovoltaic materials. As a professional supplier, J&K provides a variety of reagents for the synthesis of photoresists. Our products offer reliable quality and high performance and are available in different package sizes from grams to kilograms to meet your requirements from basic research to large-scale manufacturing.

## ■ Monomers for Photoresists

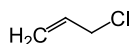
476032



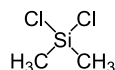
380913



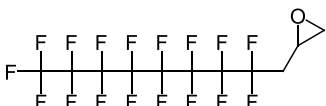
488389



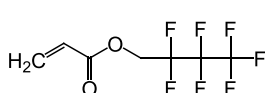
191866



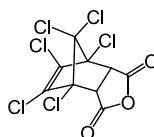
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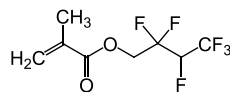
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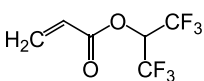
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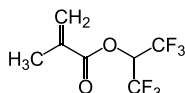
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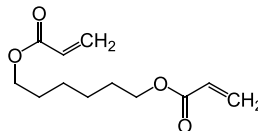
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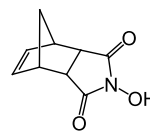
472949



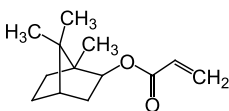
118591



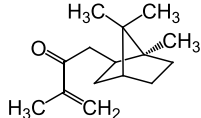
127777



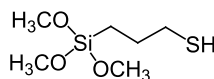
396012



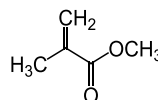
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180573

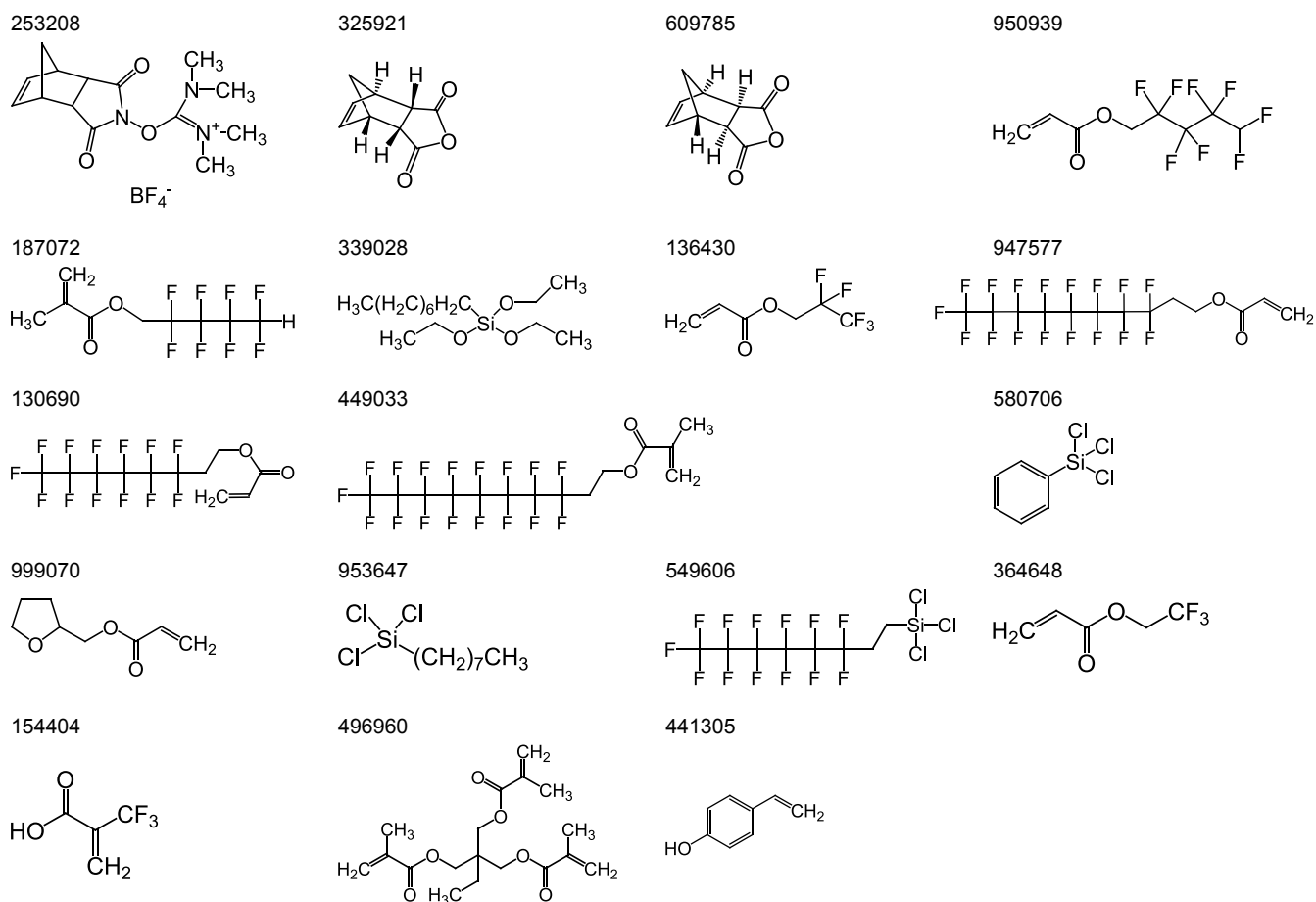


153563



Cat. No.	Description	CAS
476032	1,3-Adamantanediactic acid, 97%	17768-28-4
380913	1,3-Adamantanedicarboxylic acid, 97%	39269-10-8
488389	Allyl chloride, 98%, stabilized	107-05-1
191866	Dichlorodimethylsilane, 99.3%	75-78-5
135611	1,2-Epoxy-1H,1H,2H,3H,3H-heptadecafluoroundecane, 96%	38565-53-6
346365	2,2,3,3,4,4,4-Heptafluorobutyl acrylate, 97%	424-64-6
313268	1,4,5,6,7,7-Hexachloro-5-norbornene-2,3-dicarboxylic anhydride, 96%	115-27-5
289722	2,2,3,4,4,4-Hexafluorobutyl methacrylate, 98%	36405-47-7
443905	1,1,1,3,3,3-Hexafluoroisopropyl acrylate, 99%, stabilized with MEHQ	2160-89-6
472949	1,1,1,3,3,3-Hexafluoroisopropylmethacrylate, 99%	3063-94-3
118591	1,6-Hexanediol diacrylate, 88%, stabilized with 100 ppm HQ	13048-33-4
127777	N-Hydroxy-5-norbornene-2,3-dicarboxylic acid imide, 98%	21715-90-2
396012	Isobornyl acrylate, 93%, stabilized with 200 - 400 ppm MEHQ	5888-33-5
283272	Isobornyl methacrylate, 90%, stabilized with 150 ppm MEHQ	7534-94-3
180573	3-Mercaptopropyltrimethoxysilane, 97%	4420-74-0
153563	Methyl methacrylate, 99%	80-62-6

# Reagents for Photoresists Synthesis

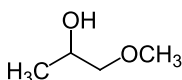


Cat. No.	Description	CAS
253208	O-(5-Norbornene-2,3-dicarboximido)-N,N,N',N'-tetramethyluronium tetrafluoroborate, 98%	125700-73-4
325921	cis-5-Norbornene-endo-2,3-dicarboxylic anhydride, 97%	129-64-6
609785	cis-5-Norbornene-exo-2,3-dicarboxylic anhydride, 96%	2746-19-2
950939	2,2,3,3,4,4,5,5-Octafluoropentyl acrylate, 98%, stabilized with MEHQ	376-84-1
187072	2,2,3,3,4,4,5,5-Octafluoropentyl methacrylate, 98%	355-93-1
339028	n-Octyltriethoxysilane, 97%	2943-75-1
136430	2,2,3,3,3-Pentafluoropropyl acrylate, 97%	356-86-5
947577	1H,1H,2H,2H-Perfluorodecyl acrylate, 97%, stabilized with 70 ppm BHT, 15 ppm TBC	27905-45-9
130690	1H,1H,2H,2H-Perfluorooctyl acrylate, 95%	17527-29-6
449033	2-(Perfluorooctyl)ethyl methacrylate, 97%	1996-88-9
580706	Phenyltrichlorosilane, 98%	98-13-5
999070	Tetrahydrofurfuryl acrylate, 98%, stabilized with MEHQ	2399-48-6
953647	Trichloro(octyl)silane, 98%	5283-66-9
549606	Trichloro(1H,1H,2H,2H-perfluorooctyl)silane, 97%	78560-45-9
364648	2,2,2-Trifluoroethyl acrylate, 98%, stabilized with 200 ppm MEHQ	407-47-6
154404	2-(Trifluoromethyl)acrylic acid, 98%	381-98-6
496960	Trimethylolpropane trimethacrylate, 90%	3290-92-4
441305	4-Vinylphenol, 95%, 10 wt.% solution in propylene glycol	2628-17-3

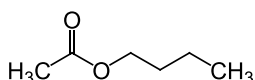
# Reagents for Photoresists Synthesis

## ■ Additives for Photoresists

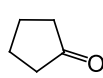
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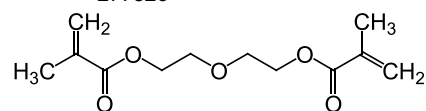
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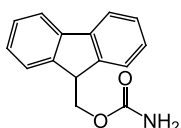
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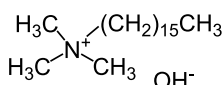
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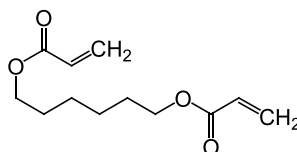
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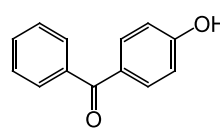
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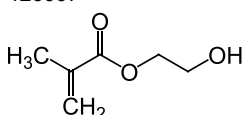
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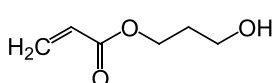
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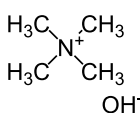
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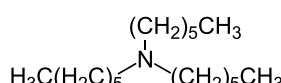
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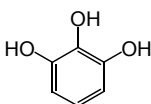
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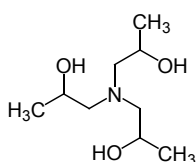
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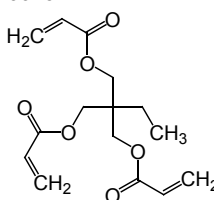
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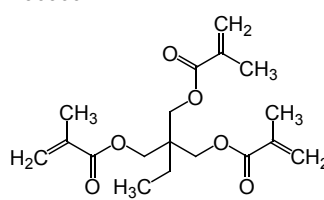
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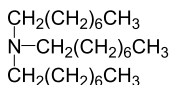
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136152

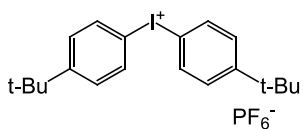


Cat. No.	Description	CAS
152163	1-Methoxy-2-propanol, mixture of isomers, 99.5%	107-98-2
908824	Butyl acetate, 99%	123-86-4
246925	Cyclopentanone, 99.5%	120-92-3
277526	Di(ethylene glycol) dimethacrylate, 95%	2358-84-1
277506	9-Fluorenylmethyl carbamate, 98%	84418-43-9
215000	Hexadecyltrimethylammonium hydroxide, 25% in methanol	505-86-2
118591	1,6-Hexanediol diacrylate, 88%, stabilized with 100 ppm HQ	13048-33-4
277043	4-Hydroxybenzophenone, 99%	1137-42-4
126667	2-Hydroxyethyl methacrylate, 99%, stabilized with 100 ppm MEHQ	868-77-9
620524	Hydroxypropyl acrylate, 96%, mixture of 2-Hydroxypropyl and 2-Hydroxy-1-methylethyl acrylate	25584-83-2
457936	Tetramethylammonium hydroxide, 25% solution in H <sub>2</sub> O	75-59-2
283288	Trihexylamine, 98%	102-86-3
193900	1,2,3-Trihydroxybenzene, 99%	87-66-1
213496	Triisopropanolamine, 99%, mixture of isomers	122-20-3
992571	Trimethylolpropane triacrylate, 85%, stabilized with MEHQ	15625-89-5
496960	Trimethylolpropane trimethacrylate, 90%	3290-92-4
136152	Trioctylamine, 97%	1116-76-3

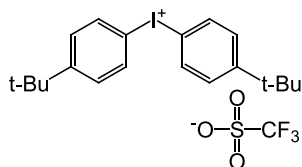
# Reagents for Photoresists Synthesis

## ■ Photoacid Generators

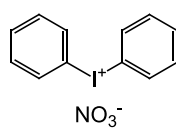
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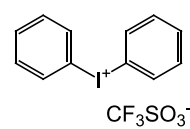
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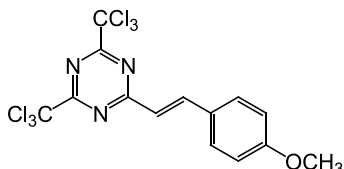
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485359



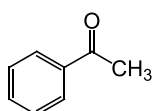
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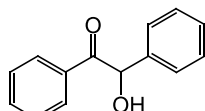
Cat. No.	Description	CAS
177582	Bis(4-tert-butylphenyl)iodonium hexafluorophosphate, 98%	61358-25-6
512472	Bis(4-tert-butylphenyl)iodonium triflate, 98%	84563-54-2
517519	Diphenyliodonium nitrate, 97%	722-56-5
485359	Diphenyliodonium triflate, 98%	66003-76-7
305170	2-(4-Methoxystyryl)-4,6-bis(trichloromethyl)-1,3,5-triazine, 98%	42573-57-9

## ■ Photoinitiator for Photoresists

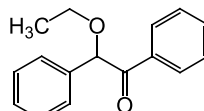
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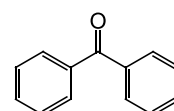
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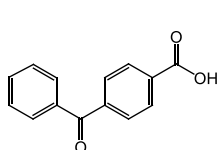
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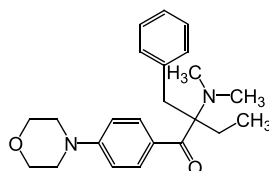
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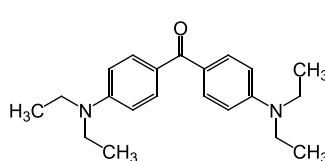
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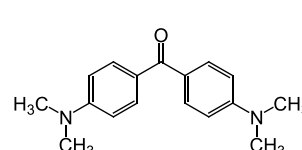
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606200



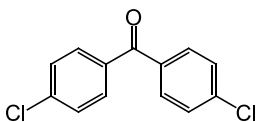
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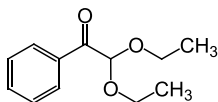
Cat. No.	Description	CAS
167389	Acetophenone, 98%	98-86-2
438305	Benzoin, 98%	119-53-9
319287	Benzoin ethyl ether, 99%	574-09-4
248099	Benzophenone, 99%	119-61-9
339349	4-Benzoylbenzoic acid, 99%	611-95-0
124965	2-Benzyl-2-(dimethylamino)-4'-morpholinobutyrophenone, 97.5%	119313-12-1
606200	4,4'-Bis(diethylamino)benzophenone, 99%	90-93-7
278244	4,4'-Bis(dimethylamino)benzophenone, 98%	90-94-8

# Reagents for Photoresists Synthesis

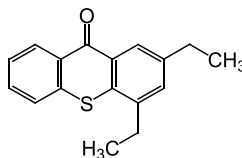
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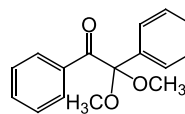
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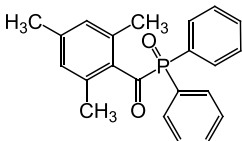
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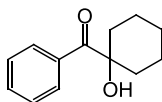
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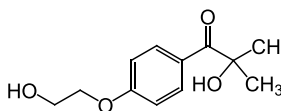
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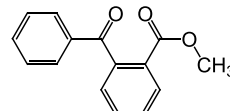
330139



511601



342981



Cat. No.	Description	CAS
125941	4,4'-Dichlorobenzophenone, 99%	90-98-2
131709	2,2-Diethoxyacetophenone, 97%	6175-45-7
105216	2,4-Diethyl-9H-thioxanthen-9-one, 98%	82799-44-8
543244	2,2-Dimethoxy-2-phenylacetophenone, 98%	24650-42-8
567999	Diphenyl(2,4,6-trimethylbenzoyl) phosphine oxide, 99%	75980-60-8
330139	1-Hydroxycyclohexyl phenyl ketone, 99%	947-19-3
511601	2-Hydroxy-4'-(2-hydroxyethoxy)-2-methylpropiophenone, 99%	106797-53-9
342981	Methyl 2-benzoylbenzoate, 99%	606-28-0



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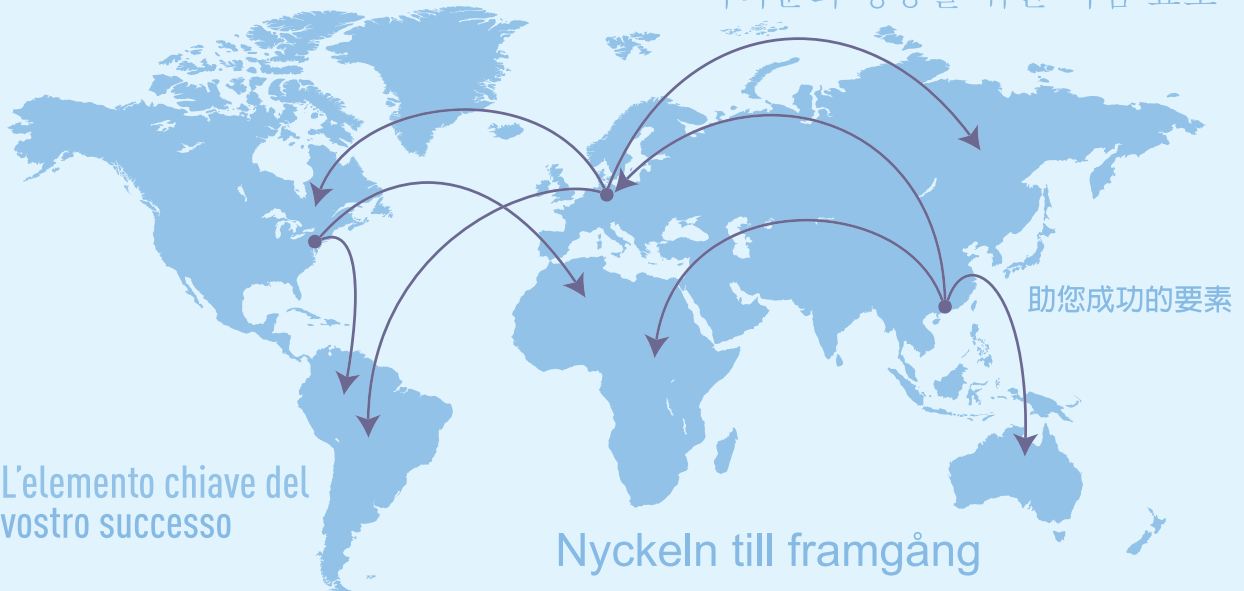
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